New York Opens Its Post-War Exhibit

Billion Dollar Program Given Graphic Display

A DRAMATIC preview of New York City's program of public improvements now being planned for post-war construction is being offered to citizens and visitors in an exhibit at 500 Park Avenue, Manhattan, which was formally opened on May 1 by Mayor F. H. LaGuardia.

Estimated to cost more than $1,250,000,000 in federal, state, city and public authority funds, this program has already reached an advanced stage of detailed planning. The exhibit space in the former Board of Education Building at Park Avenue and 59th Street has been transformed into a modern, artistic, and well-arranged exhibition hall permitting visitors to make a circuit tour of the various displays. The exhibit shows, in graphic form, what is being planned, where the numerous projects will be located and the purposes they will serve. All city departments and agencies have cooperated to the fullest extent in the development of these projects as parts of the entire shelf of public works assembled by the City Planning Commission at the direction of the Mayor.

In a press release from the office of Mayor F. H. LaGuardia on May 1, it was stated that:

"The two fundamental, underlying principles in the development of this program are the planning now of urgently needed public improvements of all kinds, many of which have been too long deferred due to lack of funds or war construction restrictions, and the preparation now of a shelf or backlog of worth-while projects which could be put under contract immediately after the war to help relieve a possible unemployment situation that may be created through the demobilization of the armed forces and industrial war workers.

"It is estimated that this construction program will provide direct employment for approximately 250,000 men at the peak of the program, based on an 18-month to 2-year period. Of course, many more men will also be employed in the mills, factories, and shops producing materials for these projects and in transportation and other related industries. Graphic displays at the entrance of the exhibit convey the magnitude of the program, indicating the quantities of many of the important materials to be used and the man-hour labor involved."

The central feature of the exhibit is a large floor model of New York City on which all of the projects in the Post-war Program are shown by colored, three-dimensional symbols. From a semi-circular ramp visitors can look down on the diagrammatic map of the metropolis presenting a general panorama of the city as it might appear from the air. This map also shows each project for the various city services represented by a suitable symbol and located in such a way as to indicate clearly the general orientation of all the projects to the city as a whole and to local neighborhoods. The effect of the entire map is to show the possibilities of coordinating the various types of local improvements and the opportunities of relating such improvements as parks, public housing projects, schools and playgrounds and local street improvements with the comprehensive system of highways and regional arterial routes, the primary purpose being, of course, to provide a greater degree of convenience and comfort in local community services within the various neighborhoods and to permit greater freedom of movement in and about the city for the millions who live and do business in New York.

A section of New York's "Post-War Program" Exhibit, two other views of which appear on the front cover of this issue.

The remainder of the Exhibit has been developed on a geographical basis, providing separate sections for each of the five boroughs, where details of many of the local projects in the forms of models, drawings and other graphic presentations are grouped about a large-scale index map of each borough. In connection with each borough exhibit, certain sections have been developed in large-scale model form to indicate the definite correlation between various types of projects. These area models are significant because they indicate the real opportunities and uses that have been made for coordinated planning. Models of housing projects include related school, recreational and health activities.

Other Important Projects

In addition to these coordinated developments, there are many isolated but equally important and hardly less attractive projects such as sewage disposal plants which are landscaped and esthetically developed, designed to carry forward the program of purifying the waters of New York's harbor and waterways, expanded and improved facilities for the storage of sanitation trucks and equipment in centrally located facilities, with improved methods for handling and disposing of refuse material, many improvements along the waterfront for postwar commerce, taking into account the use to which the present large fleet of victory and liberty ships may be put, and a multitude of miscellaneous items such as rebuilding and extensions to the sewerage and water systems, repaving of many important streets and thoroughfares and a large program to overcome the many needs of long-deferred maintenance and increasing obsolescence in the city plant, which have necessarily been neglected due to building restrictions during the war.

A special booklet, "New York's Post-war Program," by Mayor LaGuardia, has been published in connection with the exhibit. The exhibit is to be open Mondays, Wednesdays and Fridays from 1:00 P.M. to 9:00 P.M. and Tuesdays, Thursdays, Saturdays and Sundays from 12:00 noon to 6:00 P. M.

HELP HIM GET THAT

LONG DISTANCE CALL

THROUGH TONIGHT

You can do it by not using Long Distance between 7 and 10 P. M. Those are the night-time hours when many service men are off duty and it's their best chance to call the folks at home.

BELL TELEPHONE SYSTEM

Our Municipal Notebook

City Takes Bids for Insurance

AN unusual municipal insurance contract in which the city drew up its own specifications for the insurance it wished to carry and awarded the entire contract to the lowest bidder has been placed by Berkeley, Calif., according to the International City Managers' Association. A 12-page set of specifications drawn up by heads of the fire, police and public works departments, the city manager and the purchasing agent, set forth extent of coverage, method of payment and details of handling and settling claims or judgments. Coverage includes 50 trucks, 140 privately owned automobiles operated by city employees, 92 police automobiles, 29 pieces of fire apparatus and cars in public buildings, streets, community houses, and playground equipment.

Since a California Law makes cities liable for personal injuries and property damage resulting from the operation of vehicles in any municipal activity, the new contract insures all elected and appointed officials and employees against any and all liability for bodily injuries or death and property damage both real and personal. Limits of liability for any one accident are $100,000 and $50,000 for property damage.

Berkeley's contract for comprehensive fleet, general public liability, and property damage insurance was awarded to the lowest of nine bidders who quoted premiums ranging from $16,400 to $23,910 for a three-year policy payable in three installments.

The lower price of $16,400 results from permitting companies with only a rating of A or better to bid, and from the restricted use of automobiles, reducing the amount of equipment to be insured.

When New York's Engine Co. No. 20 roars out of the fire house, Chief, the Dalamatian mascot, rides to the blaze in state. The firemen, fearing that the dog might be mauled in the city's traffic, built this sidecar on the Mack Pumper for him.

How to Think About Traffic Signals Now

IT is time for municipal police and safety officials to face the question of whether their existing traffic signals will serve coming traffic needs. Much of the traffic control equipment in service was old before the war; much of it was inadequate. Neither its mechanical condition nor its ability to perform adequately will have improved with time.

Certainly it is reasonable to expect renewed and perhaps increased traffic flow. Vehicle operators and pedestrians, for whose benefit traffic control is primarily installed and upon whose cooperation its success depends, will not be more patient than of yore. They will expect traffic control to be abreast of other engineering development.

The fact is that great progress has been made in recent years in the design of traffic controllers. There are traffic actuated types which give the greatest refinement in meeting the momentary requirements of traffic at intersections; and pre-timed controllers with much greater flexibility are now available. Types of practical traffic controllers have been extended so that you can handle practically any traffic situation which occurs with such regularity that its requirements can be determined.

This flexibility, of course, should not be an invitation to go wild. Apart from the investment angle there is sound reason for keeping traffic control as simple and straightforward as possible. Simple means work best—that is, they obtain the most satisfactory observance.

Reference to simplicity in this connection means simplicity from the point of view of the vehicle operators, and is not necessarily characteristic of the control apparatus itself. Yet controllers for even the most complex functions manage to be reasonably simple and inexpensive.

What is simple and straightforward from the vehicle operator's standpoint is not necessarily of an elementary nature. The proper analysis of traffic needs and the application of control equipment to meet those needs involve a highly specialized form of engineering. The traffic engineer must not only be a good general engineer but must also have special training and experience in his field and the facilities for measuring and analyzing traffic. Benefits possible through the use of the more flexible types of traffic controllers may be unobtainable without competent traffic engineering.

Some assistance in the application of traffic-control equipment can be obtained from equipment manufacturers. However, it is more than likely that the ever-changing needs of traffic make this engineering a full-time job. If the services of a traffic engineer are not available at present in your community, it may be a worthwhile first move to obtain such an expert to study your local problem.

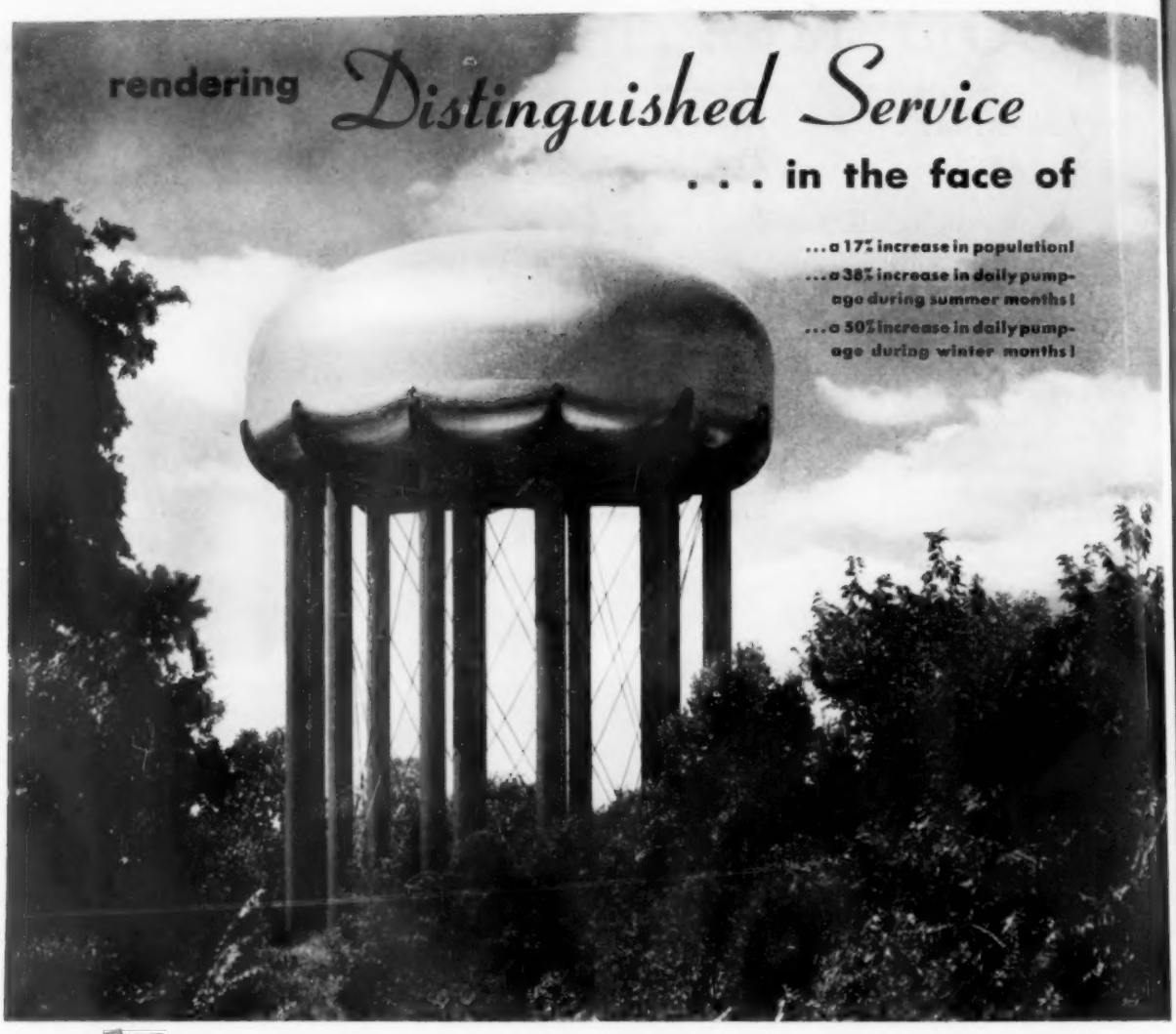
Traffic control doesn't make traffic go; it tries to keep it from becoming stopped. How well it will succeed in the days of unrationed tires and gasoline will depend a great deal on what steps you take now in your city to plan for adequate traffic control.

Traffic Markers

THERE has long been a need for traffic markers that are effective, long-lasting and always available year in and year out. Many have been placed on the market and some of them are still there. Half a dozen years ago, rubber disc markers were brought out. These discs, installed in Journal Square, N. J., and around Public Service Electric Company headquarters in Newark, N. J., were beginning to win a reputation, but something happened and on top of that several years later, the war came and rubber went. Traffic paint always has to be renewed, as often as four times a year. Steel discs are doing war work. What are the cities now using for pavement markers? THE AMERICAN CITY has heard various rumors, but would like to hear from the cities themselves. City Officials, what is the best pavement traffic marker today? Or what are *you* using?

Municipal Index

Articles on many subjects of wide interest to municipal authorities will appear in the 1944 edition of the MUNICIPAL INDEX, to be published this month.


rendering Distinguished Service
. . . in the face of
...a 17% increase in population!
...a 38% increase in daily pumpage during summer months!
...a 30% increase in daily pumpage during winter months!

For foresight in the planning of water supply systems many water companies and municipal officials should be cited for outstanding service to their cities. Those who recommended Horton elevated tanks as sound peacetime improvements are today seeing this type of storage adequately serve in the face of greatly increased water demands. Such is the case at Indianapolis, Ind.

The Indianapolis Water Company installed the 1,500,000-gal. Horton radial-cone bottom elevated tank shown above, several years ago, to improve the water service in the Blue Ridge district at Indianapolis. According to recent reports, the average daily summer demand for water has increased from 36.87 to 52.12 million gals. from the year 1931 to 1943. During the same period, the average daily winter demand has increased from 27.67 to 41.68 million gals. Also during the same years, the population of Indianapolis increased about 17%. Elevated storage has helped to provide adequate water service in spite of these demands.

The Indianapolis Water Company has other Horton elevated storage tanks throughout its system to help maintain adequate pressure in this city and its suburbs. One of these units is a 1,500,000-gal. tank which is 72 ft. to bottom and has a range in head of only 25 ft.

CHICAGO BRIDGE & IRON COMPANY

Birmingham 1 ....1502 North Fiftieth Street
Houston 1 .....5601 Clinton Drive
Tulsa 3 .....1625 Hunt Building
New York 6....3308—165 Broadway Building
Cleveland 15.....2236 Guildhall Building

Chicago 4 .....2127 McCormick Building
San Francisco 5.....1033 Rialto Building
Philadelphia 3.1616-1700 Walnut St. Building
Havana .....402 Edificio Abreu
Washington 5 .....330 Bowen Building

Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PENNSYLVANIA

Water Supply and Treatment

Highlights of Md.-Del. Meeting

ACTIVE demonstrations of wartime water developments will highlight the coming Maryland-Delaware Water and Sewerage Association meeting to be held at the Lord Baltimore Hotel May 19-20, according to Fred E. Stuart, Chairman of the Program Committee. The demonstrations include that of removing salt from sea water by The Permutit Company, New York; the field distillation of salt water by Capt. H. H. Black, Corps of Engineers, Ft. Belvoir, Va.; demonstration of the "Quinn Micro-Filter" by Lt. Comm. David H. Quinn, Bureau of Aeronautics, Navy Dept.; and demonstration of sterilization of water by the canteen method by Capt. James B. Baity, Sanitary Corps. T. F. O'Connor, Office of Chief Engineers, War Department, also will show how to use the Universal Calculator for determining flow of water in pipes—rapid method.

Among the formal papers to be delivered, of chief interest will be an observation on increasing filtration rates at the Nation's capitol by C. J. Lauter, Chemical Engineer, Washington Filtration Plant; and the problems in supplying a wartime water demand at Norfolk, Va., by R. W. Fitzgerald, Superintendent of the Norfolk Water Department. Dr. Abel Wolman, Professor of Sanitary Engineering, Johns Hopkins University, will speak on the post-war sanitary program in the United States.

Don't Let It Be Said — —

YOU probably have heard remarks that water is "doped" with chemicals. This implication is unfortunate, as Mr. C. S. Timanus of the Burns & McConnell Engineering Co., Kansas City, Mo., pointed out recently before a local meeting of the American Society of Chemical Engineers in Kansas City. In principal treatment processes the added chemicals largely go out again with the undesirable material. Thus for each ton of lime added to soften water, 2½ to 3 tons of calcium carbonate or chalk are removed.

"And when you taste chlorine in water be sure it is chlorine for many of us have imaginative tasters, but don't worry, the amount is infinitesimal. It won't hurt you. Rather you should thank your lucky stars that you have drunk this very dilute chlorine solution rather than pathogenic bacteria."

Louisville Plans Water Improvement

THE municipally owned Louisville Water Company, Louisville, Ky., is preparing plans for a new coagulation basin to be constructed after the war, according to B. E. Payne, Chief Engineer and Superintendent. Alvord, Burdick and Howson, consulting engineers of Chicago, have been retained to prepare the design.

Work is to include a 60 mgd capacity coagulation basin to be used in connection with lime, soda, water-softening treatment. The basin is designed to consist of two independent basins with flocculators, clarifiers, and continuous mud removers.

According to Mr. Payne, studies are also being made regarding the installation of new chemical-feed and mechanical-handling equipment with a view to more efficient storing and handling of the necessary chemicals.

Skillful Well Drilling Eliminates Water Problems

A LOT of the problems arising out of the use of ground water can be solved by careful selection of the aquifier when the well-driller drives his well. This was demonstrated at LaCrosse, Wis., when the Layne-Northwest Company recently drilled three new wells, into strata that were free from iron, manganese, hydrogen sulphide, or any other objectionable water content.

According to George M. Galloway, who helped place the last well, the procedure for placing and constructing the last well was as follows:

First they drilled an 8-inch test well setting a 6-inch Layne-Keystone screen and test pump at various depths in the alluvial formation between 100 and 148 feet. These tests showed that the water below 140 feet had too much iron and manganese for the quality desired. Above 140 feet the water had zero iron and manganese content.

Following this, they drilled a 46-inch diameter hole to a depth of 101 feet and placed a 36-inch diameter casing in the hole grouting this with neat cement. Next they drilled a 34-inch hole to a depth of 139 feet and under-reamed it by placing a concrete foundation which was 5 feet 6 inches in diameter by 6 inches thick in the bottom of the under-reamed portion. Then 30 feet of 24-inch Layne shutter screen was placed with 25 feet of 24-inch casing extension on the top. Approximately 27 yards of gravel were used in filling the annular space around the screen.

The static water level of the well was 10 feet, 7 inches, and the pumping level at 3,600 gpm was 70 feet. After 48 hours of pumping there was no trace of iron or manganese.

Officials help test one of the wells drilled recently for LaCrosse, Wis.

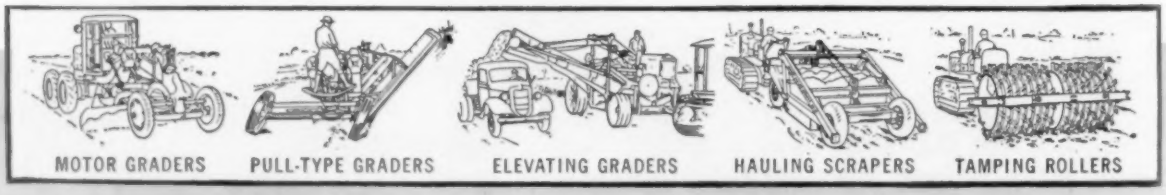
For concentrated fighting and high casualties, few battles in American history can approach Tarawa. Burrowed deeply into the earth, the Japs resisted fiercely the determined attacks of U. S. Marines. In the end the enemy were wiped out almost to the last man but only a few hundreds of the attacking force escaped death or injury.

Scarcely had the shooting stopped when Adams motor graders, in the hands of the Seabees, ran ashore to clear away the rubble left by the battle. Within a few days after the Marines landed, the motor graders had completed the air strip pictured above thus establishing another advance base from which our planes can operate.

This is just another example of how not only Adams motor graders, but Adams leaning wheel graders, elevating graders and tamping rollers are in the thick of the fight in the hands of the Army and Navy throughout the world—performing with characteristic dependability. While our brave sons and brothers carry the fight forward on foreign shores let us back them to the limit on the home front to hasten the day when they can return to their normal peacetime pursuits.

J. D. ADAMS COMPANY · INDIANAPOLIS, IND.

At war's end we'll need many new roads and many jobs for returning service men. Plan post war projects now and meet both needs.



ADAMS ☆ ROAD-BUILDING AND ☆ EARTH-MOVING EQUIPMENT

Sewerage and Sewage Treatment

Be Careful About the Use of Liquid Sludge

NOT so long ago the statement appeared in one of the state board of health publications to the effect that a certain sewage plant operator had been furnishing liquid, undigested sludge for use on victory gardens and that the results were most gratifying. It is a bit surprising and rather unfortunate that such a practice should apparently have the approval of an authority as responsible as a state board of health.

Raw Sludge Unsafe

The warning was expressed plainly enough during the last Federation of Sewage Works Associations meeting in Chicago when Dr. Eloise B. Cram, Senior Zoologist for the U. S. Public Health Service, cautioned sewerage men that certain parasites of pathogenic importance would survive most of the standard sewage-treatment processes and create a possible source of infection if the sludge were not at least air-dried. Of the parasitic diseases considered, amoebic dysentery, is the most serious and the cysts of the parasite *Endamoeba histolytica*, which causes this disease, apparently could not withstand the digestion process; a percentage of the eggs of the hookworm and of the large roundworm remain viable throughout the digestive process; however, in the effluent they were not removed either by primary settling or by the trickling filter of the activated sludge process.

Victory Garden Hazard

Consequently the use of raw liquid sludge on victory gardens simply has no place in sewage treatment if it is expected that the process will perform its primary function—that of protecting public health. Not only might one expect the parasites to remain in the raw sludge itself but also in the unseparated liquor. Commenting further, Dr. Cram stated the following in correspondence:

"It would appear extremely hazardous to encourage the utilization of raw sludge at any time and more particularly so during the next few years while military personnel returning from foreign countries may be carriers of disease organisms which, once spread in some such manner, would be very difficult to control. To advocate a procedure which involves a decided lowering of our sanitary standards at such a time is far from intelligent."

Air-dried sludge, heat-dried sludge, or digested sludge presents a somewhat different problem. However, no operator should recommend the using of undigested sludge on victory gardens.

Sludge Digestion Army Style

HERE is the capacity that digestion tanks should have for the various types of sewage treatment if they are to meet Army specifications:

Type of Sewage Treatment	Digestion Tank Capacity Cu. Ft. per Capita Heated Tanks
Plain sedimentation (no recirculated flow)	2.0 cu. ft.
Plain sedimentation with chemical precipitation	3.0 cu. ft.
Trickling filters either low or high capacity	3.0 cu. ft.
Contact Aeration	3.0 cu. ft.
Activated sludge	4.0 4.0 cu. ft.

These capacities are based on the use of heated digestion tanks. If the tanks are unheated the army calls for an additional 50 percent in capacity.

In case hot water is used to heat the tank, a good standard figure is one square foot of coil area per 100 cubic feet of tank volume. This was explained by Albert B. Kozma, Superintendent of the Rutherford, N. J., Joint Meeting Sewage Treatment Plant, at a recent New Jersey Sewage Works Association meeting.

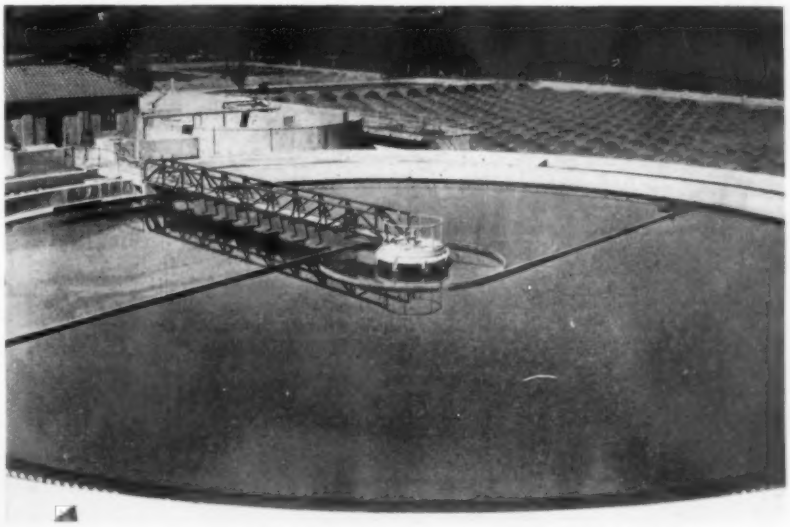
Chemical Precipitation Urged

THE use of chemical precipitation in the treatment of sewage should be employed more frequently, according to Louis P. Booz, City Engineer, Perth Amboy, N. J. Mr. Booz made this statement at a recent meeting of the New Jersey Sewage Works Association at Trenton, and was discussing a paper by Richard Oliver, Sanitary Engineer, Perth Amboy.

"It is interesting," said Mr. Booz, "that when the original PWA grant was made, government examining officials were extremely critical of the plant and demanded that we supply confirming opinions from several other engineers. This same official, now a professor in a nearby university, regularly brings his class out to our plant for student inspection trips."

The Perth Amboy plant employs the chemical precipitation method of sewage-treatment only during the summer months. During the fall, winter, and spring, plain sedimentation, filtration, and post chlorination furnishes adequate treatment.

According to Mr. Oliver, the plant has operated substantially as the designers anticipated. He feels that it needs a grit chamber and sludge incinerator to thoroughly round out its treatment facilities.



San Bernadino, Calif., completely remodernized its sewage-treatment plant recently. The new construction included a 112-foot Dorr primary clarifier with a Currie Claraetor shown in the foreground. A second clarifier for secondary clarification and two Barnes Dorrco sludge pumps were also included. The Imhoff tanks were remodeled into multidigestion systems with the primary units having fixed steel roofs.

WARD LaFRANCE TRUCK DIVISION

GREAT AMERICAN INDUSTRIES, INC.

ELMIRA NEW YORK

MEMORANDUM TO THE ADVERTISING AGENCY

FROM: A. Ward LaFrance, Vice President
Great American Industries, Inc.

SUBJECT: POSTWAR FIRE APPARATUS

You know about the intensive developmental work on postwar fire apparatus which our engineers have been conducting, and you will be interested in the summary of hundreds of helpful replies to our questionnaire addressed to representative fire chiefs, who were good enough to assist us with their ideas. These replies are convincing evidence that we have been proceeding along the right lines.

I know your artists are itching to draw handsome pictures of super-streamlined postwar Ward LaFrance equipment, after looking over our engineering visuals -- but let's not attach too much importance to mere appearance. Fire apparatus has a vital job to perform, and fire protection people are as practical as the day is long.

When you have occasion to refer to postwar Ward LaFrance equipment, please make it clear that what we are shooting at is maximum fire-fighting ability per pound. That means motors and chassis designed specifically for fire-fighting purposes, the best possible arrangement of controls and connections, the most practical locations for hose reels and ladders, better seating accommodations for the crew, more carrying space for auxiliary equipment, greater safety for firemen, and ability to get into extinguishing action sooner, to mention but a few of the really important factors.

Fire departments are seriously hampered by inability to secure much-needed equipment. They not only want to know that better apparatus than ever is coming -- they want to know how soon. They will be glad to know how quickly we will return to full civilian production as soon as war demands have been met. And, by all means, urge them to consult us now. We can fill their needs much sooner if we can start now to plan for meeting the particular requirements of their communities.

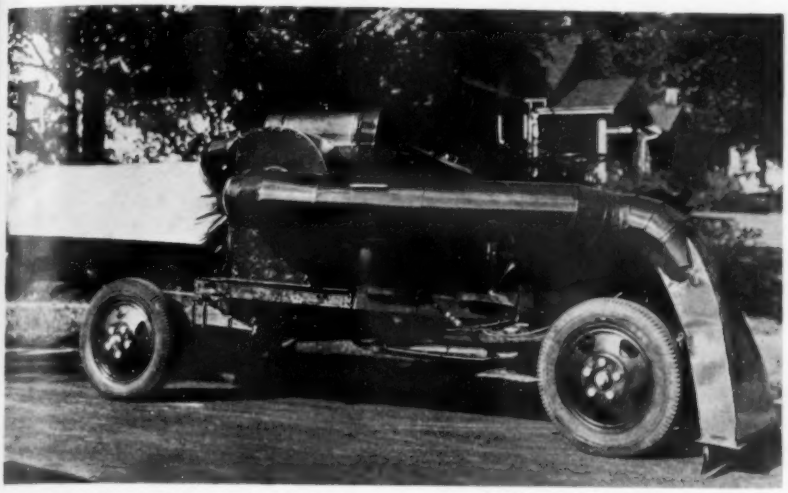
A Ward LaFrance

A. Ward LaFrance.

GREAT AMERICAN INDUSTRIES, INC., GENERAL OFFICES, MERIDEN, CONNECTICUT
DIVISIONS
CONNECTICUT TELEPHONE & ELECTRIC DIVISION, MERIDEN, CONNECTICUT
WARD LaFRANCE TRUCK DIVISION, ELMIRA, N. Y.—FACTORY BRANCH, 139TH ST. & EASTERN BLVD., NEW YORK
VIRGINIA RUBATEX DIVISION, BEDFORD, VIRGINIA
RUTLAND ELECTRIC PRODUCTS DIVISION, RUTLAND, VERMONT

Street Maintenance

The Leaf-Sucker-Upper from Wyoming, Ohio



F. G. Gedge, Public Service Inspector, Wyoming, Ohio, sends this photograph of Wyoming's reversion of the leaf-sucker-upper which is believed to antedate the peripatetic model revised at Columbus, Ga. (See THE AMERICAN CITY, *Feb. '44, p. 63; Mar. '44, p. 13.)*

Unit Sacks Leaves and Shows Greater Cleaning Efficiency

TO the Editor of THE AMERICAN CITY:

Let's not start another war with Georgia—but Ohio still claims the credit for the original leaf-sucker-upper.

We built the first model of our "leaf-sucker-upper" in September of 1939 and have tinkered with it each year since. We now have the original fan and driving motor mounted on a truck chassis.

We stripped down a second-hand Ford truck of 1½-ton capacity, straightened the steering post and crowded the seat up against the fore-shortened cowl, to increase the length of the chassis and accommodate the fan and the light sheet iron body bed for the sacks. The fan consists of a second-hand shavings exhaust fan driven by direct roller-chain drive from a Model "A" motor, on which we mounted an oversized radiator for more adequate cooling of the motor.

Leaves are sucked up by the fan and discharged into the sacks, approximately 3 feet in diameter by 8 feet long, which when filled are picked up by another truck. By sacking the leaves we are able to load from eight to ten sacks on an ordinary 1½-ton truck, which enables us to haul very much larger loads than is possible by loading on the ordinary truck even though you use sideboards on the truck.

Since the accompanying photograph was taken we have placed the suction spout directly below the fan, immediately in front of the rear wheel of the truck, which greatly improves the suction of the fan by getting away from the long horizontal pipe as shown in the picture.

F. G. GEDGE
Public Service Inspector
Wyoming, Ohio

Aid for War-Essential Streets

IF any of the streets in your city have a direct military interest such as arterial streets connecting war plants with shipping centers or routes to military reservations, and you are having difficulty keeping them in shape, here is what you can do.

Municipalities confronted with the need for equipment to maintain roads of direct military interest should first appeal to the State Highway Department for assistance. If the latter is unable to aid the municipality it may submit the request to the District Engineer for the Public Roads Administration whose certification to the War Department will depend on finding that the state and municipality cannot secure adequate equipment elsewhere, and that the roads on which the equipment is to be used are of military interest.

Need Weighed

Upon reviewing this information the commanding officer of the Army Service Command will weigh the military termine whether or not he has adequate equipment available to lend, or repair-parts and road-maintenance materials to lend or sell to the municipality.

Bituminous Distributor Restrictions Relaxed

THE Industry Advisory Committee of WPB after reviewing Schedule XI of the construction machinery and equipment simplification order (L-217) recommended a relaxation in the size restrictions on bituminous distributors.

According to the present schedule, manufacture of bituminous distributors is limited to three sizes: 800-, 1,000-, 1,250-gallon capacities. The manufacture of bituminous distributor pumps is also limited to specified sizes and types.

According to recommendations the 800-gallon distributor will remain the minimum size and the manufacture of larger sizes will be allowed without restriction. Manufacturing distributors of less than 800-gallon capacity results in a wasteful use of components, the committee feels.

Need Larger Sizes

A committee member reported that large size distributors are needed in the Middle West. Further discussion revealed that distributors with 3,000-gallon capacity had already been built and that even larger sizes are practical. The size of the distributor is determined by the size of available trucks for trailers.

WPB officials feel that the new recommendations will have little effect on production this year because component parts are scare and allotments of other materials needed in the manufacture of distributors are based on the available supply of these components.

Four articles on the Construction and Maintenance of Streets will appear in the 1944 Edition of the MUNICIPAL INDEX, available about June 1.

WATER MAGIC!

The cleansing and purifying powers of SOLVAY Liquid Chlorine are almost magical! Treat germ-ladened, dirtied water with this orange liquid and—presto! water is made safe and sanitary.

The "water magic" of this effective chlorine bactericide is safeguarding the health of our soldiers by "washing out" impurities, foul tastes, and odors from water supply units. On the home front, municipal water works systems purify drinking water and safely dispose of sewage wastes with SOLVAY Liquid Chlorine.

SOLVAY
LIQUID CHLORINE

Today, SOLVAY Liquid Chlorine safeguards the health of a nation and its fighters with "water magic." Tomorrow, the powers of this orange liquid will serve municipalities and industries with the benefits of war-time discoveries.

SOLVAY SALES CORPORATION
Alkalies and Chemical Products Manufactured by The Solvay Process Company
40 RECTOR STREET NEW YORK 6, N. Y.

Public Health

How to Make a Building Ratproof

IF you are looking for a way to make buildings as ratproof as practical under ordinary construction conditions, here are some suggestions set forth by the U. S. Public Health Service in a recent issue of *Public Health Reports*. The recommendations are based on rat-stoppage work at Charleston, S. C.

Straight curtain walls for foundations have not proved to be particularly effective even when placed to a depth of 48 inches. However, L-shaped walls, 24 inches deep present a different picture. Complete protection was provided without excessive costs although many burrows were traced down to the shelf and in many cases along the entire flange. Eighteen-inch L-shaped walls also proved to be effective. Out of 31 cases only one was penetrated.

Charleston provided a severe test for ratproofing. Of 77 establishments with curtain walls, all establishments burrowed into by the rats were food-handling places. With their normal ways blocked, the rats, attracted by the food, make an extra effort to enter these buildings.

L-Shaped Walls

L-shaped walls find application in new construction and in the repair of old buildings. Where concrete floors are present the value of curtain walls may be questioned. However, in the absence of ratproof floors, rat penetration should be anticipated and the 24-inch L-shaped walls should be more effective and economical than straight walls.

The report was prepared by Ralph Porges, past Assistant Sanitary Engineer, U. S. Public Health Service.

Professor Winslow Editor American Journal of Public Health

THE appointment of Professor C.-E. A. Winslow as Editor of the American Journal of Public Health, succeeding Harry Stoll Mustard, M.D., is announced by the American Public Health Association. The new Editor took office with the April issue.

Professor Winslow is Anna M. R. Lauder Professor of Public Health at Yale University, New Haven, Conn. His identification with the American Public Health Association has been long and intimate. He served as Chairman of its Committee on Administrative Practice for 15 years and as Chairman of the Committee on the Hygiene of Housing since its establishment 7 years ago. He was elected President of the Association in 1926, and received a certificate for 40 years of continuous membership and the Sedgwick Memorial Medal for distinguished service to public health in the same year, 1942.

He is as well known among heating and ventilating engineers, bacteriologists, and housing experts and to public health workers. His bibliography is long and impressive, including hundreds of articles, pamphlets and such books as *The Life of Hermann M. Biggs, The Evolution and Significance of the Modern Public Health Campaign, A City Set on a Hill, Health on the Farm and in the Village, and Health Under the "El."* His latest book is *The Conquest of Epidemic Disease.*

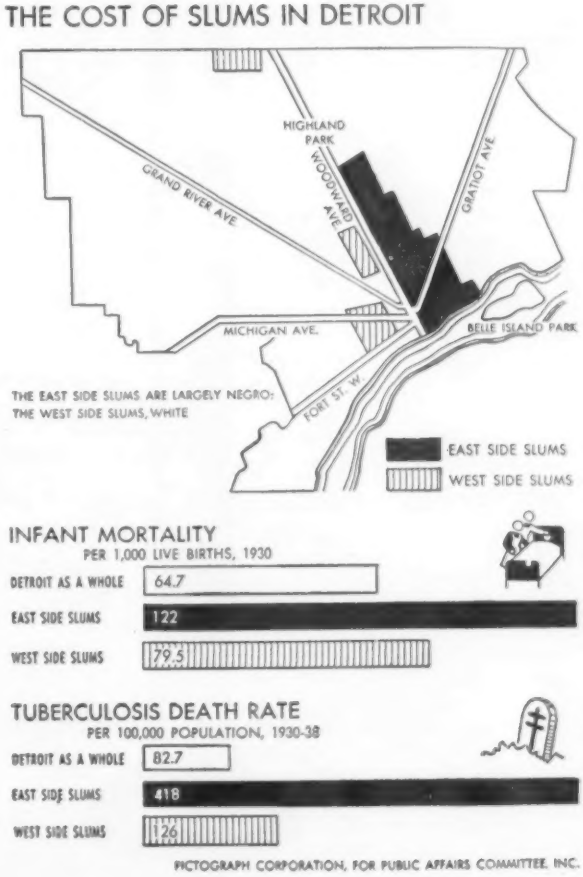
Dallas Opens Prophylactic Station

THE Dallas city health department has opened a free prophylactic station available to both men and women 24 hours a day for the purpose of preventing the spread of venereal disease, the American Municipal Association reported recently. The service will be on a completely confidential basis.

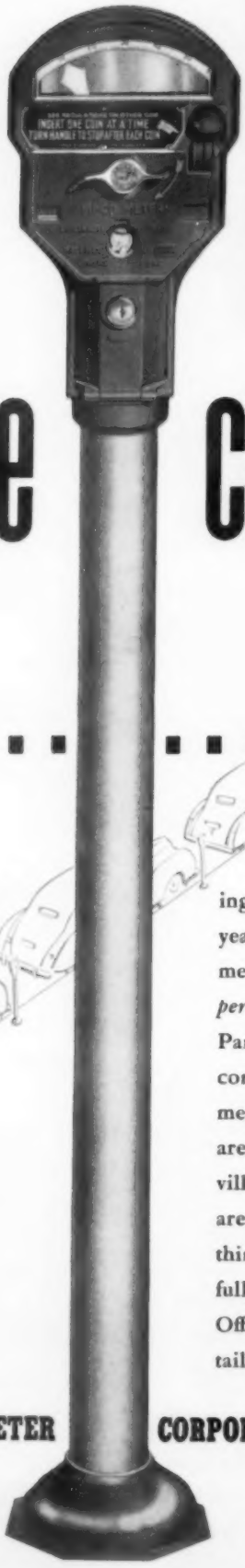
The free station is located at the city hospital, and a staff is available at all hours of the day and night to give prophylactic treatments, and for emergency diagnosis and treatment. While the new service is primarily for civilians, military personnel will be served upon request.

Dallas long has maintained a free venereal disease treatment clinic, health officials state. However, this new clinic should help to prevent the spread of the disease rather than merely treat it.

In the growing war against the slums, many effective charts are being used by national or local organizations and agencies. This Public Affairs Committee chart is an example. *See also page 62 of this issue, and page 39 of the April issue.*


THE COST OF SLUMS IN DETROIT
HIGHLAND PARK
WOODWARD AVE.
GRAND RIVER AVE.
GRATIOT AVE.
MICHIGAN AVE.
BELLE ISLAND PARK
FORT ST. W.
THE EAST SIDE SLUMS ARE LARGELY NEGRO; THE WEST SIDE SLUMS, WHITE
EAST SIDE SLUMS
WEST SIDE SLUMS
INFANT MORTALITY
PER 1,000 LIVE BIRTHS, 1930
DETROIT AS A WHOLE 64.7
EAST SIDE SLUMS 122
WEST SIDE SLUMS 79.5
TUBERCULOSIS DEATH RATE
PER 100,000 POPULATION, 1930-38
DETROIT AS A WHOLE 82.7
EAST SIDE SLUMS 418
WEST SIDE SLUMS 126
PICTOGRAPH CORPORATION, FOR PUBLIC AFFAIRS COMMITTEE, INC.

LESS than one service call per meter ... per year!



That's the story of 1400 MI-CO Parking Meters installed in an eastern city. In one year only 1322 service calls were made for mechanical failure . . . *less than one call per meter per year.* The low cost of maintaining MI-CO Parking Meters is the result of unusually rugged construction, fewer moving parts, and many mechanical refinements. MI-CO Parking Meters are made to meet the requirements of a small village or a large city. Right now these meters are not available, but it's not too early to be thinking about and planning for the future. A fully illustrated folder, "MI-CO Parking Meters Offer Many Advantages," gives complete details and specifications. Send for a copy today.

MI-CO METER CORPORATION—231-239 Court Street, COVINGTON, KY.

MI-CO Parking Meters are manufactured under the patents of F. L. Michaels by The Michaels Art Bronze Co., Inc., Covington, Ky.

Jeeps, Cycles and Scooters Fight Airport Fires

PLANES warming up—planes taking off — planes landing — planes being serviced. That's a phase of the war—and also the future buzz of civilian aviation. It has brought a new fire hazard which calls for fast-moving crash trucks equipped to extinguish gasoline fires. In addition to these big fighters are the recently developed jeeps, motorcycles, and motor "scooters" shown here. Equipped with cylinders of carbon dioxide and manned by experienced fire-fighters, these units have advantages of mobility, speed, and maneuverability worthy of broad consideration.

These miniature "crash trucks" able to travel in soft ground and off the hard or paved surfaces, where crash landing fires often occur, add to the versatility of the airport crash crew. As stand-by equipment to guard against warm-up fires, they release large units which might be needed elsewhere. The small extinguishers carried are usually ample and effective for run-of-the-mill fires. Fire chiefs may recommend them also for protection of factory locations which cover considerable ground or inside large industrial plants. Where passages and doorways permit, the self-propelled scooter with its four 15-pound carbon dioxide extinguishers can drive through doorways and down passages to get at and smother incipent fires.

To the aid of plane fires and crashes come small fire-fighting jeeps, motorcycles and scooters. Equipped with fire-fighting cylinders of carbon dioxide the small rescue units are dependable and efficient in extinguishing fires on landing fields.

National Safety Awards

THERE aren't more than half a dozen cities in South Dakota with a population over 10,000. One of those six cities is Aberdeen, and cooperation came from practically every one of its 17,105 citizens when asked to observe traffic safety measures and precautions. As a result, Aberdeen was awarded the grand prize over 1,296 other cities in the country in the National Traffic Safety Contest, sponsored by the National Safety Council.

Utah, the eighth most sparsely populated state, received equal honors as a state with Aberdeen as a city. All 48 states participated. Contest rules provided that the national grand award should go to the state and city, which in the opinion of the judges, came nearest in their programs to the maximum that could be done practically for traffic safety.

As well as grand prizes for one city and one state of the nation, states were grouped geographically, and cities by population, and further awards were presented to 3 states and 6 cities: Connecticut in the Eastern division, Oklahoma in the Southern, and Minnesota in the Midwestern. The cities which won first place in their population groups were Cleveland and Chicago (tied), Cincinnati, Wichita, Kan., Arlington, Va., Rochester, Minn., besides Aberdeen, S. D., which won first place in the 10,000-25,000 group in addition to the national grand award.

Special awards of merit were made to Milwaukee, and Providence, R. I., for conspicuously low traffic death rates in 1943. The contest judges cited other states and cities and named a special honor roll of 156 cities with population between 5,000 and 10,000 without a traffic death in 1943.

Motorcycles Relieve Officer Shortage

WE have 13 motorcycles on our Police Department, one of which is radio-equipped. We find that our motorcycles perform valuable service such as directing traffic, escorting funerals, and making hurry-up calls. We intend to continue the use of motorcycles in this department, though we will not increase the number until the growth of the city demands more. Because of the quick service of the motorcycle, we have postponed an increased personnel.

THOMAS J. MARTINSON,
Superintendent of Police
Hammond, Ind.

FOR QUICK ACTION ON STEEL

Principal Products

Bars • Shapes • Plates • Floor Plates • Sheets • Structurals • Reinforcing • Mechanical Tubing • Boiler Tubes • Boiler Fittings • Carbon and Alloy Steel • Tool Steel • Allegheny Stainless • Babbitt • Solder • Wire • Chain • Rivets • Nuts, Bolts, etc.

Write for Stock List

Every type of steel from stainless to structurals is carried in stock for quick shipment from eleven strategically located Ryerson plants—steel for maintenance and repair, for replacements and new construction, for all the varied municipal requirements. If you have a problem of selection, application or fabrication Ryerson engineers and metallurgists will gladly work with you. Through more than a century of service Ryerson has established itself as a fast, dependable source. Call Ryerson first when you need steel.

Joseph T. Ryerson & Son, Inc., Plants at: Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Pittsburgh, Philadelphia, Jersey City.

RYERSON STEEL-SERVICE

Stop--Check and Mail

Please check over the following list of interesting catalogs obtainable free of charge and either write direct to the manufacturers for their literature, or, if you prefer, put a circle around the identifying numbers below to indicate the catalogs you want, mail this coupon to The American City Magazine, 470 Fourth Ave., New York 16, and we will see that catalogs are sent to you without expense or obligation on your part.

5/44

172 173 174 175 176 177 178 179 180 181

182 183 184 185 186 187 188 189 190

191 192 1943 194 195 196 197 198 199 200

201 202 203 204 205 206

Name ---------- Position ----------

Address ----------

Mechanical Joint for Cast-Iron Pipe

172. The Dresser Manufacturing Co., Bradford, Pa., is offering Catalog 415ARM to give you full information on the Dresser Bellmaster Joint, style 85. Water-works men will be interested in the details of and applications for this light, compact mechanical joint. Sizes are available from 3 to 16 inches.

Wells for Development of Water Supply

173. If you are interested in developing large water supplies from sand and gravel formations, literature is available from the Kelly Well Co., Inc., Grand Island, Neb., on their concrete cased wells. The brochure discusses the principle involved in their unique method of digging wells for the development of water supplies.

Learn About Fire Alarms

174. A well prepared booklet has been published by The Gamewell Co., Newton Upper Falls, Mass., discussing the Vitaguard fire alarm system for volunteer departments. A preliminary discussion presents fire information, brief details on organized fire fighting, the origin of fire alarm telegraph, and gives figures on fire losses in small cities. Another section covers the Vitaguard fire alarm system giving you the features of this, discussing maintenance and the equipment involved. Of interest to city fire officials are several plans which have been devised to show the proper spacing of alarm boxes in order to get the best results from a fire alarm system.

A Money-Saving Boiler Aid

175. If you use steam power in any of your municipal operations you should be interested in the newest bulletin issued by the Cochrane Corp., 17th & Allegheny Ave., Philadelphia, Pa., entitled "Cochrane Continuous Blow-Off Systems." According to this literature a continuous blow-off system conserves practically all the heat in the water; the only heat wasted being that which corresponds to the thermo-difference between the incoming cooling water and the blow-off water going to the sewer. Various layouts are described showing how this money-saving auxiliary equipment can be fitted to practically any boiler arrangement.

Assistance for Laying of Bituminous Material

176. For your street construction or maintenance work you will be interested in information on the Kwik-Mix bituminous non-tilting mixer. This is an end-discharge mixer for applying cold- or hot-laid bituminous mixtures to new surfaces or for maintenance of old ones. Details are given on the way this machine works and discusses the many advantages to the man in charge of this work including the ease with which it may be moved. Write Kwik-Mix Concrete Mixer Co., Port Washington, Wis., for Catalog BAC.

Ladder Trucks for Fire Fighting

177. Full details and specifications will be supplied you by the American-LaFrance-Foamite Corp., Elmira, N. Y., on aerial ladder trucks. The American LaFrance-Foamite city service trucks are equipped with ladders of 65, 75, 85, or 100 feet whichever suits your needs best. Other features of the equipment include assorted lengths of ground ladders and full complement of accessory equipment.

Underground Pipe Installation

178. Details are available from the Hydrauger Corp., Ltd., 116 New Montgomery St., San Francisco, Calif., discussing "The Mechanical Gopher." This equipment would find a place in your water works for the installation of pipe. Its main feature, as emphasized in literature that is available from the company, is the fact that pipe can be installed horizontally underground without the necessity of uprooting and destroying city and privately owned pavements and lawns, or any of the other necessary inconveniences usually brought about from open trenching.

Pump Drive

179. Water Works and sewage treatment superintendents will be interested in Catalog No. 12 of the Johnson Gear & Manufacturing Co., Ltd., Berkeley, Calif. This covers the Johnson right-angle gear drive that you may utilize in your plant as a connecting unit between the pump and the power unit. Literature shows the various sizes available and points out just how it may be used to the best advantage in your plant.

How to Prepare Top Soil

180. If you are interested in lawns, parks or golf courses you may receive literature from the Royer Foundry & Machine Co., 179 Pringle St., Kingston, Pa., on the Royer shredder and mixer. This equipment is utilized by municipalities for the mixing of top dressing for the soil as well as the preparation of sewage sludge for use as fertilizer. The Royer shreds, mixes, and in addition eliminates from the mixture sticks, stones and trash.

Pump Primers

181. If pumps in your water works or sewage disposal plants are in need of primers, Bulletin No. 402 may be secured from the Valve and Primer Corp., Room 366, 111 W. Washington St., Chicago, Ill. This contains information on APCO automatic primers clearly detailing what a primer is, how it works, its advantages, and gives data for the proper selection of the equipment.

A Multigraph Saving

182. You may receive information from the Addressograph-Multigraph Corp., Cleveland, Ohio on their Multilith Systemats. The Systemat carries a certain amount of constant information, leaving room for variable data which can be included when necessary, and the entire sheet reproduced. Learn how this system would fit into your offices and the many time and labor-saving advantages it possesses.

Installing Pipe Without Disturbance

183. Folder S-117 is being offered by Greenlee Tool Co., 2024 Columbia Ave., Rockford, Ill., giving the facts on their hydraulic pipe pusher. This folder shows the various models available, their specifications, and actual work pictures of the pusher forcing the pipe directly through the ground to the point desired.

Reflector Lights Easily Seen

184. Do your traffic signals perform the tasks intended of them properly? Information is available from the Minnesota Mining and Manufacturing Co., 900 Fauquier Ave., St. Paul 6, Minn., on Scotchlite reflective material. Signs made of Scotchlite are easily distinguishable either by night or day, easy to handle, and adaptable to all types of sign lettering.

Sight Flow Indicators

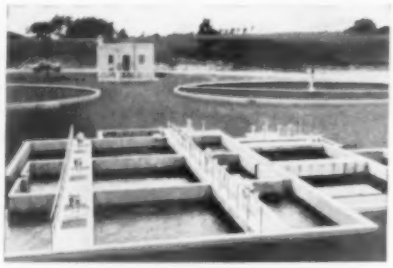
185. A complete line of Bull's Eye Sight Flow Indicators is shown in the new Fischer & Porter Catalog 93-B. Bull's Eyes installed in your piping systems will enable your operator to determine whether or not liquid is flowing and also to observe it visually. Catalog 93-B gives information on sizes, dimensions, and types of connections to simplify specification. Write Fischer & Porter Co., 975 County Line Rd., Hatboro, Penna.

Water Works Control Valves

186. Complete information is being offered by The Chapman Valve Manufacturing Co., Indian Orchard, Mass., to water-works officials on their control valves. These units can be installed on valve equipment indoors, outdoors, or completely submerged, and include many other features that can meet your specific requirements.

(Continued on page 20)

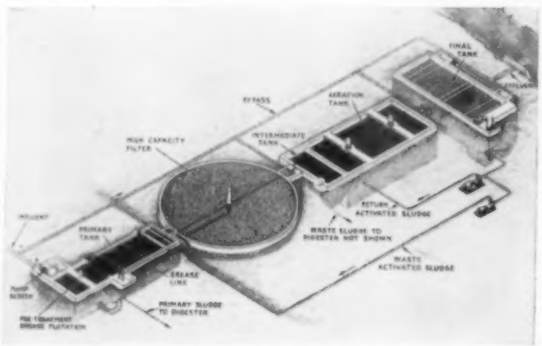
American Bio-Activation for Sewage Treatment



CHILTON WISCONSIN

Bio-Activation combines the best qualities of both the trickling filter and the activated sludge process to produce a completely stable, nitrified effluent, low in B. O. D. and suspended solids.

FLOW SHEET

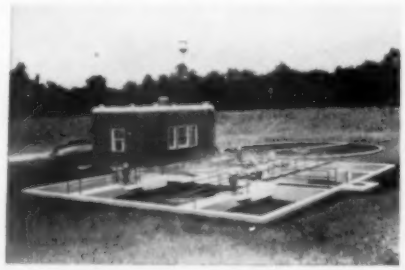


TYPICAL OPERATING RESULTS

	Domestic, Malt, Brewery and Canning Wastes	
	5 BOD	Suspended Solids
Raw Waste	342	370
Primary Effluent	235*	134
Influent to Filter	510†	...
Filter Effluent	99	143
Intermediate Effluent	58	65
% Reduction Filter Influent through Intermediate Effluent	89.5	...
Final Effluent	13	15
% Overall Removal	97.5	96

*High Soluble 5 BOD waste from malt and brewery.
†Pea waste; 600-1200 ppm. 5 BOD, added in primary effluent.

COVINGTON OHIO



Blue Print Now—Send for Bulletin No. 259

AND USE COUPON ON PAGE 19 CHECK THIS COLUMN

(*Continued from page* 19)

Disinfection of Mains

187. If consideration is being given to the disinfection of your water mains data may be secured from Luther and Wood, 310 Chandler Bldg., Washington 5, D. C. They are ready to perform this task on any size of main. Also available from this company is data on chlorinating equipment, chemicals, and the supervision of chlorination.

Clear the Odors from Plants

188. Write for a catalog from the C. B. Dolge Co., Westport, Conn., on the Deodoroma refills for the Dolge Diffuser. This product can be used effectively in your municipal plants to clear the air of all foul odors. The blocks last for eight weeks and require but a minimum of labor and equipment to use them.

Form Engineering Simplifies Concrete Work

189. Engineers and public officials in charge of concrete construction will be interested in the bulletin being offered by the Williams Form Engineering Corp., Box 925, Madison Square Station, Grand Rapids 7, Mich., entitled "Form Engineering." This contains complete information on the most economical designing of forms and presents analyses of various ways to secure difficult corners in form construction and suggestions on ways to secure floor and beam panels.

Elevated Tank Controls

190. Information is available from the Automatic Control Co., 1005 University Ave., St. Paul 4, Minn., on their pressure-type controls for elevated tank systems. Information on the three types of controls for levels in distant elevated tanks, nearby tanks, and for remote or direct control of tanks, lists uses of the various models and their features.

The "Know How" of Sludge and Scum Removal

191. The Rex Conveyor Sludge Collectors are the subject of Bulletin 429 published by the Chain Belt Co., Milwaukee, Wis. It discusses in some detail the work of these collectors which remove sludge and scum from primary tanks; and lists the outstanding features of this equipment. Data and photographs are supplied on typical installations.

Make a Permanent Record of pH

192. If in the operation of your water, sewage-treatment, or power plant, you would like to see pH at a glance or refer to a continuous pH record drawn on a handy chart, you will be interested in a new catalog issued by Leeds & Northrup Co., 4934 Stenton Ave., Philadelphia 44, Pa. It describes the equipment consisting of just two elements; an unusually rugged glas-electrode assembly and a Micromax Recorder. Through the electrode chamber flows a continuous sample of the water or sewage to be measured where it completely covers the electrodes and a temperature compensator. Voltages are continously measured by the Micromax which indicates and records directly pH records. When writing for your copy ask for Catalog N-96(1).

Municipal Electric Plants

193. —will find of interest catalog No. 40 published by Superior Switchboard and Devices Co., Canton, Ohio. The various sections of this booklet cover detailed data with illustrations and specifications on such topics as test switches, meter-test blocks, meter-connection units, boxes, test tables, safety blocks and similar related equipment.

Dress Your Municipal Workers Properly

194. Have your municipal workers the type of uniforms that do justice to your city? Reeves Brothers, Inc., 54 Worth St., New York 13, N. Y., have a leaflet discussing the Reeves Army Twill and Glengarrie Poplin. This literature discusses the wearing quality of the materials and tells how they meet U. S. Government Tests.

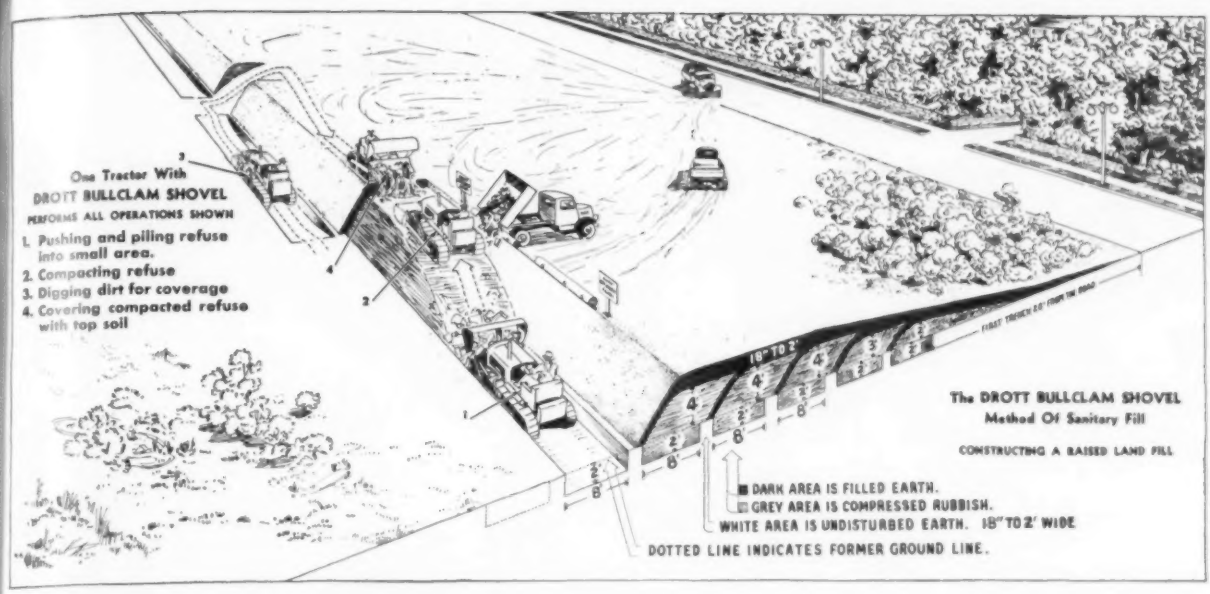
Airport Paving Design

195. Portland Cement Association, Dept. 3-4, 33 W. Grand Ave., Chicago 10, Ill., are offering to airport construction officials the assistance of their engineers in the design of concrete war- or post-war airport pavements. The association points out that the proper engineering design formulas provide the best concrete paving without wasteful overdesign or danger of early failure under traffic.

Aluminum in Sewage-Treatment Plants

196. Aluminum Company of America, 2172 Gulf Bldg., Pittsburgh, Pa., is ready to provide sewage-treatment officials with data based on actual experience to show you the many places aluminum may be used in your plans for post-war construction and improvements. The company points out that the lighter weight of aluminum, especially on stop gates, provides easy operation and the elimination of rusting.

(*Continued on page* 22)


One Tractor With
DROTT BULLCLAM SHOVEL
PERFORMS ALL OPERATIONS SHOWN
1. Pushing and piling refuse into small area.
2. Compacting refuse
3. Digging dirt for coverage
4. Covering compacted refuse with top soil
The DROTT BULLCLAM SHOVEL
Method Of Sanitary Fill
CONSTRUCTING A RAISED LAND FILL
DARK AREA IS FILLED EARTH.
GREY AREA IS COMPRESSED RUBBISH.
WHITE AREA IS UNDISTURBED EARTH. 18" TO 2' WIDE
DOTTED LINE INDICATES FORMER GROUND LINE.

A DUMP BECOMES A LANDSCAPED LOT

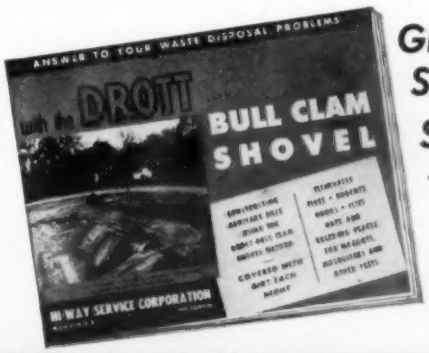
FILLING OVER REFUSE! All rubbish is completely covered after each day's haul.

with the DROTT BULL CLAM SHOVEL Method of Sanitary Fill

Instead of unsightly dumps you can have picturesque landscaped lots with the Drott Bull Clam Shovel Method of Sanitary Fill . . . and have the use of the land for playgrounds, parks or for building purposes. This method builds up low areas and levels uneven or hilly places — seals waste with clean top soil. You eliminate odor and fire hazards, minimize the blowing of dust, papers and other debris over the neighborhood. Does not invite rats and other rodents, flies, maggots, mosquitoes and roaches. You shorten your hauls and lower handling cost because Sanitary Fills may be constructed close to residential areas. It will pay you from every angle to start a Drott Sanitary Fill in your community. Write for our book, "The Answer To Your Waste Disposal Problems."

DROTT BULL CLAM SHOVEL FITS ALL CURRENT MAKES AND MODELS OF CRAWLER-TYPE TRACTORS, from 30 to 130 h.p. Four sizes. 1 to 4 yd. capacities.

OPERATED BY
DROTT POSITIVE, CLOSED HYDRAULIC SYSTEM
SMOOTH • QUICK
Keeps dirt and air out . . . keeps oil in! Used successfully on Drott equipment for many years.



GET THE COMPLETE STORY!
Send for this Book
"Answer To Your Waste Disposal Problems . . . With the Drott Bull Clam Shovel"
FREE!

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UNIVERSAL
EQUIPMENT

WRITE
HI-WAY SERVICE CORPORATION
3841 W. Wisconsin Ave.
MILWAUKEE 8, WIS.
739 Munsey Bldg. C
WASHINGTON 4, D. C.

CORRECT
METER REPAIRING HELPS OVERCOME MANPOWER SHORTAGE IN WATERWORKS

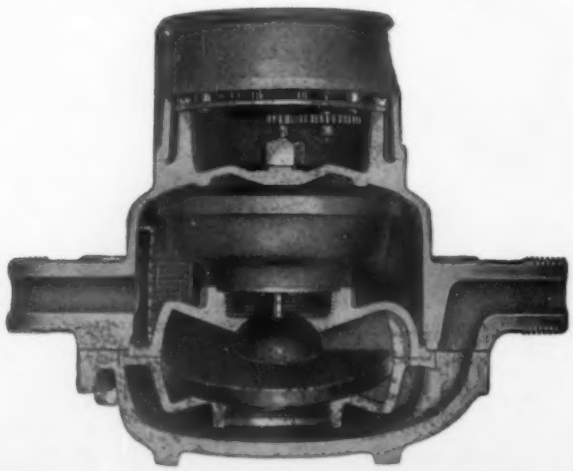
It takes less time and labor to repair a water meter well than to do it poorly. If working parts are noticeably worn, it is good economy to insert such new parts as are needed, instead of trying to make the worn ones last any longer. Using the correct new parts assures proper accuracy when the meter is tested after assembly. No time is lost in unsuccessful trials of old parts, or in retesting. The work is right the first time.

An adequate overhauling further pays for itself by restoring full earning power, and assuring that this will last several years. Meters repaired inadequately do not register as well on slow flows and may be back in the shop for more repairs in a year or two.

Repair time is still further shortened if you are using Buffalo-made meters—unexcelled for simplicity and ease of assembly.

BUFFALO METER COMPANY

2902 Main Street **Buffalo 14, N. Y.**



CHECK THIS COLUMN AND USE COUPON ON PAGE 19

(*Continued from page 20*)

Simplify Voting Procedure

197. The work attached to voting at the primaries or at regular elections may be simplified by the use of the Automatic Voting Machine manufactured by the Automatic Voting Machine Corp., Jamestown, N. Y. Descriptive literature is available from this company covering all phases of mechanical voting and pointing out that there is no opportunity for the voter to make a mistake and invalidate his vote.

Protect License and Tax Identification

198. Protection for the sources of revenue in your municipality can be supplied by Meyercord Licenseals. Learn about the data and free designing services that The Meyercord Co., 5323 West Lake St., Chicago 44, Ill., will furnish. This company will tell how these handy identifications are produced for application on glass, wood, metal, porcelain, plastic and composition surfaces. They are non-transferable and cannot be removed without destruction. High visibility permits inspection and detection.

Simplify Your Methods of Laying Pipe

199. If you have had trouble in the past with trenching problems when laying pipe you will be interested in the Pipe Pusher manufactured by the Giant Mfg. Co., Council Bluffs, Iowa. Literature is available describing the operation of this equipment which pushes pipe, up to 15-inch diameter, through the ground at the rate of one to five feet per minute without the necessity of extensive trenching operations.

Make Service Connections Easily

200. Full information is available from the Mueller Co., Decatur 70, Ill., to water-works officials interested in making service connections without too much difficulty. Data on the Mueller drilling and tapping machine will describe how this equipment makes connections without any shut-offs, loss of time, and annoyances.

Fire Hose

201. The Bi-Lateral Fire Hose Co., 20 N. Wacker Drive, Chicago, Ill., will send you data on their rubber-lined fire hose. Learn about the advantages of this hose and how its construction features make it fit into your department to the best advantage.

Pipe for Water Works Services

202. Officials in charge of water-works distribution systems will be interested in the Transite Pipe Booklet TR-11A published by Johns-Manville, 22 East 40th St., New York 16, N. Y. Since it contains complete facts on their asbestos-cement Transite pipe, you will find included in the discussion facts on maintenance costs, assembly data and its resistance to corrosion or tubercles.

Speed Up Concrete Patching Work

203. The Calcium Chloride Assn., 4145 Penobscot Bldg., Detroit 26, Mich., are offering street maintenance men their booklet "Early Strength Concrete." This bulletin discusses the use of calcium chloride in mixes with either standard portland, high-early-strength or air-entraining cement and how it acts to cut in half the time required to provide good patches, thus helping you keep roads in more constant use.

Oil Reclaimers

204. Officials having problems in oil reclaiming will be interested in a new illustrated folder of the Youngstown-Miller Co., Sandusky, Ohio, describing their A and GH lines of lubricating and hydraulic oil reclaimers. This bulletin covers YM Oil Reclaimers with capacities ranging from 2½ gallons in 70 to 90 minutes, to 120 gallons in the same length of time.

Check Valve

205. Specifications are available from the Golden-Anderson Valve Specialty Co., Fulton Bldg., Pittsburgh, Pa., on their electric double-cushioned check valve. This valve is for use in connection with remote tank storage service located next to a centrifugal pump.

Planning Small Bridges

206. Of keen interest to city engineers and other officials in charge of bridge constructions, is the booklet "Planning Small Bridges for Post-War Construction" issued by the Republic Steel Corp., Sheet & Strip Steel Sales Div., Cleveland 1, Ohio. Mindful of the burden that highway traffic will put on small bridges after the war, they have published this 28-page booklet outlining simple, practical suggestions for planning these projects. Some of the items included tell how to inventory drainage structures, gives inspection report forms, shows how to rebuild small bridges; contains erection information, suggested specifications, typical designs and many useful charts and tables.

Vol. LIX, No. 5 **The American City** *May, 1944*

A prewar view of Britain's Houses of Parliament taken from the southern side of the Thames

London of Tomorrow

By RT. HON. W. S. MORRISON, M.C., K.C., M.P.
Britain's Minister of Town and Country Planning

BURLINGTON HOUSE, London, is famous for the exhibitions, staged there each summer, of the latest work of Britain's artists. But the last occasion on which I viisted this building was not to look at pictures.

I went to see an exhibition prepared to bring alive to the people of London the great fifty-year plan* for the rebuilding of their city drawn up by Professor Patrick Abercrombie, Britain's most famous town planner, and J. H. Forshaw, who made his name before becoming the Chief Architect to the London County Council in designing community centers, pit-head baths, and other amenities for the miners who work in Britain's coalfields.

The London County Council had arranged this exhibition so that the new Plan might be studied by the people of London and by representatives of London's various local authorities and public undertakings. When their views have been ascertained, the London County Council will formally consider the Plan; and insofar as they endorse it, will submit it to me as Minister of Town and Country Planning for Government approval.

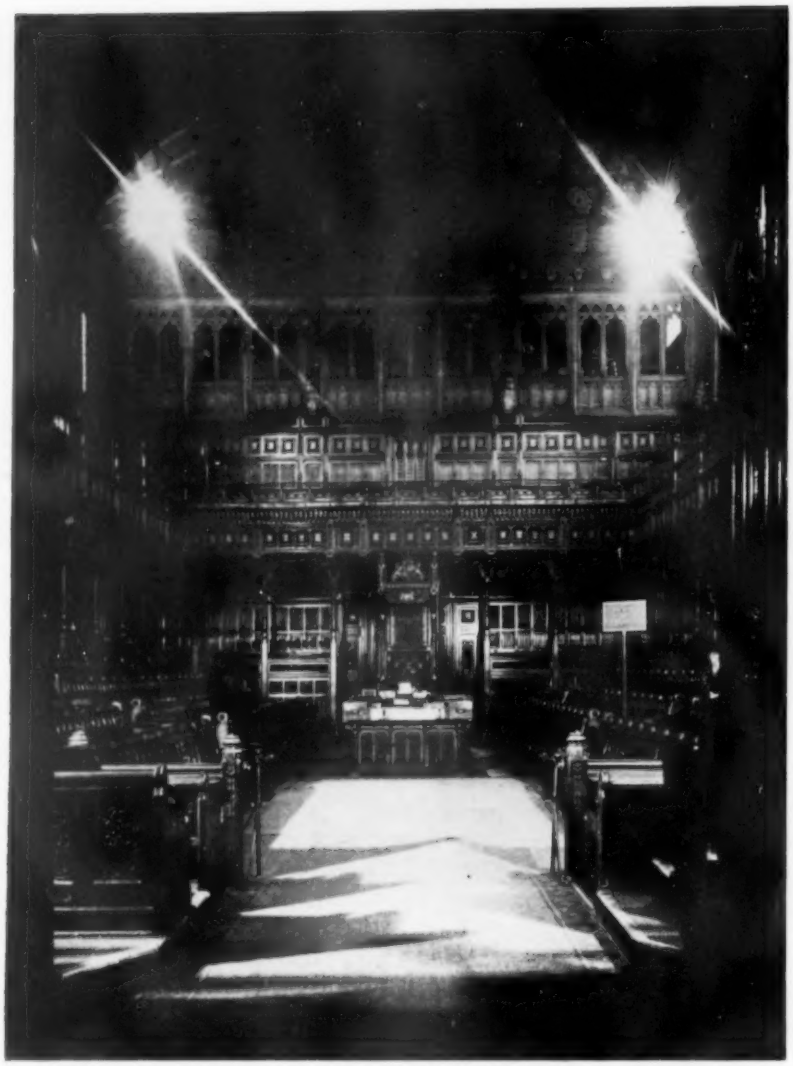
A Formidable Task

As I looked at the delightful models, the admirable plans and drawings of our London of the future, I reflected on our task of rebuilding our great cities.

In these small and crowded islands we had few great open spaces to spare in which we could raise new cities from their foundations. We had, for the most part, first to clear sides already occupied by buildings that were either obsolete or had been destroyed by the German bombers in their raids over Britain. While this clearance went on, we had to provide houses and working accommodation for the millions of people who would later inhabit our reconstructed cities. Was this too formidable a task, I asked myself, for a people strained by more than four years of war?

As the Minister charged with the responsibility for town and country planning in England and Wales, I am confident that the task can be carried through. I base this confidence partly on the past achievements of Britain's people. We have a long history of good town design, even though it got submerged during our great industrial revolution of the last century. Some of the old cities of Britain were well

* See THE AMERICAN CITY for September 1943, pages 68-69.



The oblong shape and limited seating capacity of the old House of Commons are valued features which members recommend reproducing in the new building.

fitted to meet the needs of their day; and even if modern needs have carried our industries elsewhere, we are jealous to preserve those old cities for the sake of their history and their intrinsic beauty.

Encouraging Achievements

Others of Britain's achievements, nearer in time and more fitted to present-day needs, are encouraging. It took us fifty years only to build the immensely complicated railway system which binds Britain together north and south, east and west. It took us considerably less than that to construct the elaborate underground railway system of London; and this, though a pioneer job in its time, is still the envy of many other capital cities.

I have no doubt that a people which could carry out such tasks as these in the placid years of peace, and which today is filled with a determination to make Britain a country worthy of its past and its future, can and will tackle successfully the rebuilding of London and other great cities.

This capital city of ours is very ancient. It has grown slowly over the centuries; and the wall, which the Romans built more than 1,800 years ago to protect the London of their day, is still in places visible. But London has always been a living city; and from Roman days, and before, every generation has added something of its own to it. Thus it has grown gradually, each succeeding century disclosing new needs to be met in terms of building and road-making.

Errors Needing Correction

There has never in the past been a plan for the reconstruction of London as a whole. In many of her districts, factories and houses of the workers are mixed up together, and there is lack of space for public recreation. Some of her residential districts have entirely changed their character since they were built, and houses originally intended for one purpose are today put to quite other uses.

Many of London's streets are too narrow for the tide of modern traffic. Many of her railways work, though still successfully, under great handicaps. Her fine river front on the Thames is not everywhere used to the best advantage. It would be easy to add to this list of the points at which the London of today needs remodeling.

Now we have this great fifty-year Plan for the reconstruction of a city which, for all its shortcomings, is one of the most magnificent and beautiful capitals of the world and holds in remarkable degree the affection of all Londoners. The Plan proposes to replace great stretches of now obsolete housing with such a mixture of houses and flats as will allow comfort for the workers and open spaces for their recreation.

It aims at developing what are coming to be called "neighborhood units"; that is to say, groups of houses with their own local shops and schools, and their own re-built civic center. It demands that the river front should be opened up to the public eye, by the re-grouping into compact areas of wharves and factories. It sketches the re-planning of the railway entries into London.

The Railway Problem

At present the railways run mostly overground, even into the heart of London. They bring into London each day millions of passengers—some on their way to work from London suburbs, others visiting London on business, for cultural reasons or for pleasure, from all parts of Britain as well as from countries beyond the seas.

It is claimed that this traffic, which has long taxed even the magnificent organization which runs it, could be

The House of Commons blitzed. Nevertheless, the British Parliament has carried on without interruption.

more efficiently handled if the railways were gradually carried underground into tunnels; and it is noted that much overground space would be released for other purposes by such a transformation.

Lastly, with all the schemes for reconstruction, of which I have here given only the merest hint, the Plan makes ample provision for the preservation, in surroundings freed from unworthy neighbors, of the wealth of beautiful and historic buildings for which London has long been famous throughout the world.

It is too early yet to say whether this particular Plan, which is now under discussion, will be accepted. But Englishmen, have no doubt that the energy, vitality and imagination of our people will prove equal to the task.

Reconstruction of House of Commons

Meantime, within the framework of that future London, individual British institutions have been discussing in greater detail their own plans. The Chamber, in which the British House of Commons meets at Westminister was destroyed on the night of May 10, 1941, in a heavy air raid. The House not long ago discussed the rebuilding of its Chamber and Mr. Churchill, the Prime Minister, turned aside for a moment from his overwhelming war preoccupation to open the debate with a remarkable speech on the subject.

Every member who spoke agreed that, though no labor or material that was needed for the war effort must be diverted to the rebuilding, nevertheless the reconstruction of the House of Commons was a subject of real importance. "We shape our buildings and afterwards our buildings shape us," said Mr. Churchill in a phrase which was more than once repeated during the debate; and again "I rank the House of Commons . . . at least as important as a fortification or a battleship, even in time of war." Another member during the debate spoke of the British House of Commons as "one of the greatest living organisms in this country."

"We do not seek to impose our ideas on others," said Mr. Churchill, "all the same we hold, none the less, tenaciously to ideas ourselves." He was insistent that two features of the old Chamber should be repeated in the new. It must be an oblong and not a round or semi-circular Chamber. The party system suited Britain and, as another member put it, "I prefer meeting my political opponent face to face. I do not like turning at a slant to argue with him."

It must also be too small, as it was before its destruction, to contain all its members without overcrowding. If it were made big enough to contain all its members, its routine debates would be conducted in the depressing atmosphere of a half-empty chamber, and thus the conversational style, which it has long been the custom of the House to use on such occasions, would be destroyed. On great occasions there would be "a sense of crowd and urgency"; and that was best secured by a House which in its greatest hours of debate even overflowed into the galleries.

There was a general feeling among members that the Chamber should be rebuilt upon its former site and that it should not differ too greatly in appearance from the old Chamber in which much history had been made. There were, however, demands for new conveniences—there must be better telephone facilities in the neighborhood of the Chamber; there must be rooms where typewriters could be efficiently used; the Chamber itself must be better ventilated and better lighted, and its acoustics must be much improved. (One member, on the ventilation point, declared that he had seen admirals come into the House "red in the face from the quarterdeck and within a week they were as white as a lily from the lack of ventilation.")

The Chamber, destroyed in May 1941, had itself been rebuilt after an accidental fire just over one hundred years before. The demand for these new conveniences, coming a century later, reminded all of us how quickly Britain's scientific discovery had advanced while that building had stood, and made us reflect upon the debt which every branch of our fighting services owed to the scientists in the present war.

Scientific Center Proposed

That reflection made vivid another proposal for the rebuilding of London which was voiced some weeks later by the President of the Royal Society, the greatest of all British scientific institutions. He pointed out how cramped the Royal Society and other scientific bodies housed in its neighborhood had come to be in recent years; and amid much applause he staked out a claim for the establishment in the heart of London of a Scientific Center capable of housing with dignity, and with due provision for the expansion to which all British scientific leaders looked forward, our main scientific organizations.

Both these schemes—for the future housing of our Parliament and for the future housing of British science—remain for the time being in the realm of ideas. As I said earlier, no labor or material is to be diverted from our national war effort even for such important projects as these. But certainly the House of Commons will be rebuilt; and I should like to think that in some form the well-founded ambitions of the Royal Society will be realized. We know that after the war we must build and rebuild not only for ourselves but for the generations that will come after us. We shall, I think, build too with the sense that we are thus also creating worthy memorials to the heroes and heroines of this war.

"Federal Government Must Help," Says Urban Land Institute

REPORTING a discussion of various proposals for financing the recapture and reconstruction of blighted areas in cities, at the annual meeting of the Urban Land Institute, held in Washington, D. C., January 19, 1944, the Institute's bulletin, *Urban Land*, said in its January-February issue:

"It was generally agreed that the attack on this immense problem, which involves billions of dollars in land acquisition for new building, must proceed from many sides.

"The Federal Government must help, either through subsidy or through some form of tax relief on building money. There are sharp divisions of opinion as to which of these alternatives should be used. It was agreed, however, that the state legislatures must be brought into the problem very soon so as to give cities the broadened power of eminent domain which any assembly of blighted land makes necessary.

City Bonds

"As to the cities themselves, it is now generally felt that some financial device through the issuance of bonds which will not constitute a burden on the general faith and credit of the city would be desirable. Because of the need of writing down slum and blighted areas as to their land values, such bonds could not be special assessment bonds. On this point, the advice and help of many experts is now being sought by the Institute."

Sewage Digesters Supply Gas for Domestic Consumption

When you are "Cooking with Gas" in Rocky Mount, N. C., at least 10 percent comes from the digestion tanks of the municipal sewage-treatment plant.

AS far as sewerage is concerned, Rocky Mount, N. C., has the unique distinction of being one of the few cities in the country that sells the digester gas directly to local consumers for cooking and other household uses.

It is easier for Rocky Mount because this city, like many in North Carolina, really goes all out for municipal ownership of the public utilities. The water and electric plant have been municipally-owned since 1900, the gas plant since 1914, and the sewage-treatment plant, incinerator, and swimming pool since 1941.

Gas Engine Ruled Out

When the city decided to supplant its old, inadequate septic tanks with a new modern sewage-treatment plant capable of handling top flows of 6 mgd furnishing both primary and secondary treatment, Joseph E. Sirrine, consulting engineer of Greenville, S. C., first gave thought to the use of sewage gas engines to furnish power similar to those that have become almost orthodox in most new plants. However, Utilities Director Geo. P. Womble countered the suggestion with the very practical argument that the city already had an efficient electric power plant and there was no use building another.

Consequently in the finished design Engineer Sirrine arranged to burn part of the gas in a boiler in order to supply heat for the digestion tanks and to waste the balance. However, he left a connection that would enable the operators to connect the gas line to the municipal gas generating plant if desired. This, the city did when the production of digester gas proved large enough to warrant the chance.

Uses Chemical Precipitation

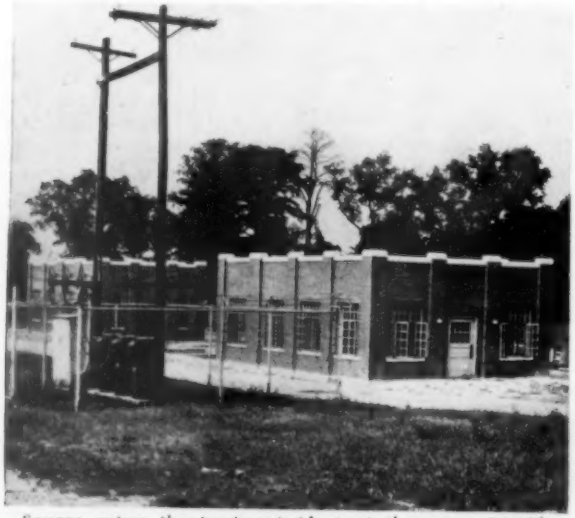
The plant itself follows a well-established design pattern and utilizes the chemical precipitation process. The designer had an eye open not only for the type of wastes that Rocky Mount has to handle at the present, but also for those that she probably will have during the post-war period. Indications are that packing plant wastes may be increased in the relatively near future and Rocky Mount's sewerage design is flexible enough to meet this added load.

Sewage enters the plant passing through an American Well Works mechanically operated bar screen with one-inch openings. These screenings are shredded in a Papec grinder and returned to the raw sewage. This shredding process supplanted the original plans to incinerate the screenings, and has improved automatic operation and bettered the flocculation in the settling tanks.

Four low-lift, axial-flow float-controlled pumps then raise the sewage, passing it through a Hydrowash which removes the grit and cleans the sewage. An additional set of four American Well Works pumps then lifts sewage against a 30-50-foot head sending it through a 20-inch cast-iron main to the balance of the plant where it flows through the rest of the treatment by gravity. Pump capacities in each case are identical. One is 3 mgd, two are 2 mgd, and one is 1 mgd.

Grease Removal Unit

The sewage enters the next portion of the plant by passing through an air-operated Simplex venturi meter and going to four American Well Works grease-flotation units where grease and other skimmings are removed. It is at this point that two Wallace and Tiernan high-rate feeders add ferric sulphate and lime to the sewage. The



Sewage enters the treatment plant at these two pumping stations where grit is removed and coarse screenings are shredded.

It then is pumped through a 16-inch force main to the central treatment building where it passes through a 21-inch venturi meter.

action of the flotation units aids flocculation somewhat, although the operators expect to realize the greatest value from the unit when additional packing house wastes are contributed. It also gives valuable assistance because of its pre-aerating characteristics.

It then proceeds to a series of three primary settling tanks with a 2-hour detention period that removes 50-85 percent of the settleable solids. The effluent from the settling tanks goes to a series of four standard trickling filters, each 135 feet in diameter and 6 feet in depth. Relatively large rocks are used as the filtering medium, varying in size from 2 to 4 inches.

The design provides recirculation for these trickling filters. The recirculation is, however, an operating aid rather than a means of improving the effluent. The filters require a flow of 2 mgd in order to maintain a minimum operating head.

The filtered effluent then enters a set of four final settling tanks to remove any remaining sludge or humus that is still in the liquid. The settled effluent then is discharged into the Tar River.

Sludge Digestion

Sludge from both the primary and secondary settling tanks is pumped to a pair of 75-foot digesters where it is held for a minimum of six weeks. Chief Operator York Brannock reports good digestion at a temperature of no higher than 80°F. Each digestion tank is equipped with a PFT floating cover and the excess gas is stored in a 10,000 cubic foot R. D. Cole steel tank. A combination boiler is used that will burn either coal, oil, or gas to heat the digesters. Five passes of heating coils are used in each tank to maintain optimum temperature. The gas is measured by two 4-inch Eimco gas meters.

The sludge is filtered on a set of four drying beds each measuring 25 by 75 feet. To aid in filtration, Operator Brannock can add approximately 4 percent ferric chloride to the sludge using a Wallace and Tiernan chemical feeder, however, this has not been necessary to date.

The connection of the gas to the city distribution system was not made immediately, but was delayed until the plant had an opportunity to show its gas-producing characteristics. As digestion proceeded the plant showed a production rate of around 17,500 cubic feet per day which the city decided to utilize. Laying a small line to the generating plant about a half-mile away, the gas is led into the final storage tanks. Here it is scrubbed and run through a Connelly iron sponge to remove corrosive sulphur.

Blends Manufactured and Sewage Gas

The superintendent of the gas plant uses care in blending the two gases because of the much higher Btu content of the sewage gas. The normal city gas runs about 400 Btu's per cubic foot, whereas the sewage gas goes to a top of as high as 750. The sewage plant meets 10 percent of the demand.

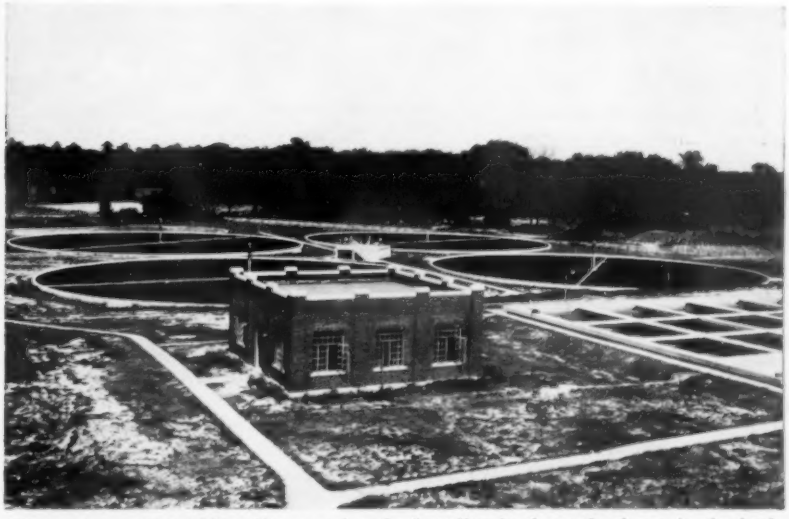
Although the use of the sludge gas probably is the most interesting of the results at Rocky Mount, it must play a secondary role to that of the actual purification of the sewage. Hard-working York Brannock, Superintendent of the sewage-treatment plant, keeps a thorough set of daily, weekly, and monthly records that show not only the degree of purification but also the condition of the stream both above and below the outfall.

Results

Regarding total solids, the treatment

From here it goes to the settling tanks shown on the right and the battery of trickling filters shown in the background. Recirculation of the effluent through the filters can be provided if desired.

It proceeds to a grease-removal unit which also serves to give the sewage a pre-aeration treatment.



Effluent from the trickling filters receives final settling in the tanks shown in the background while the sludge is dried on open sand drying beds.

removes 40 percent of these in the original sewage. Typical analyses show a figure of 14 ppm in the final effluent. In the river itself a figure of 40 ppm has been recorded.

BOD reduction is equally interesting. The treatment affords a reduction of 94 percent; the dissolved oxygen in the final effluent amounts to 10 ppm whereas 11 ppm is a typical simultaneous figure for the river. Regarding pH, that of the influent has averaged for a typical month 6.96; the effluent 7.14; and the river 7.13.

Typical sludge analyses shows the following:

Total solids	3.48
Volatile solids	72.92
Specific Gravity	1.01

A view of the digestion tanks and gas-storage tank that the city uses in its interesting gas production program. Ten percent of the domestic gas supply comes from these digesters.

The operation of the plant is paid from the funds of the Public Utilities Department whose income is derived entirely from the water, gas, and electric rates. A credit of $1.00 per 1,000 cubic feet is given the sewage-treatment plant for gas delivered to the plant. The cost of the plant, paid for by a municipal bond issue, was $643,000.

How Post-War Planning Is Organized in Toledo

By HAROLD L. DAVIS
Secretary, The Toledo Regional Planning Association

POST-WAR planning in Toledo, Ohio, is somewhat advanced as compared with the average city. It covers two fields: the private or industrial field, which is in the hands of an active Committee for Economic Development; and the public improvement program, which is a joint activity of the Toledo Chamber of Commerce, Toledo Regional Planning Association, and city and county officials.

Of the Committee for Economic Development, John D. Biggers is area chairman, with Hubert D. Bennett, chairman for Toledo and Lucas County. Inquiries regarding it should be directed to either of these gentlemen or to Burdette M. Baldwin, Chamber of Commerce, Toledo.

For public or civic development, the division of work is as follows: Metropolitan Planning Committee, Chamber of Commerce, Frank T. Sohn, chairman; City Planning Committee, Blake-More Godwin, Toledo Museum of Art, chairman; Toledo Regional Planning Association, Harold L. Davis, Chamber of Commerce, secretary.

Chronology

The procedure followed in the organization of Toledo's public improvement program chronologically is as follows: A technical committee of the Toledo Chamber was organized nearly two years ago, and after a year of study presented a program including blueprints, estimates and field notes, covering more than a dozen major projects. To further this work, the Toledo Chamber's Metropolitan Planning Committee was organized, and included under its direction other projects in which the state, neighboring counties, railroads, etc., were interested. It also dedicated itself to further planning and to the perfection of a Master Plan for Toledo.

Under sponsorship of the Chamber's Metropolitan Planning Committee, the Toledo Regional Planning Association was organized representing numerous city-wide and neighborhood groups. The purpose of this committee is to receive and discuss numerous plans and projects, and to spread through its many organizations the doctrine of sound planning and the educational work necessary to the future adoption of a Master Plan.

Meanwhile, the City of Toledo through its City manager, George N. Schoonmaker, named a City Planning Committee, whose function is to receive and further for governmental action plans suggested and plans agreed upon.

Minimizing Community Differences

The effect of these several committees has been good and clarifying rather than bad and confusing. To a great extent the people of Toledo and Lucas County have been made aware of the necessity for planning, the necessity for a Master Plan, the importance of proper timing, and the relation of one project to another. It is the hope of these groups that workable plans will be agreed upon on which possibilities of community differences will be low, inasmuch as conflicts are being ironed out as the work proceeds, and a pattern is emerging. Obviously all plans will be channeled into the official City—County Plan Commission, which recently has been given adequate appropriations for staff and materials to function as a modern planning agency.

Essential Projects

Several projects already have been tacitly agreed upon as absolutely essential and their inclusion in a Master Plan is a foregone conclusion. Meanwhile, these committees, particularly the Chamber's Metropolitan Planning Committee, may use even more subcommittees on special phases of the problem. These include a committee devoted to port problems, aviation, and special studies.

Publicity on the public improvement planning of Toledo has been educational and therefore local. Publicity on Toledo's Committee for Economic Development work has been necessarily restrained and limited. Both programs will be further publicized on a larger scale within a few months, and the work and its progress made available for those who are interested.

Omar Khayyam and the Future City—II

. . . "Could thou and I with Fate conspire
To grasp this sorry Scheme of Things entire,
Would not we shatter it to bits—and then
Re-mould it nearer to the Heart's Desire!"

More Interesting Cities— Less Costly to Maintain

By FREDERIC A. DELANO
Chairman of the Board, American Planning and Civic Association
Former Chairman, National Resources Planning Board

THE planning of cities obviously depends on the topography of the terrain where the city is located. For example, on flat prairie land, with no streams running through the area, any kind of plan can be used. The common, and often very tiresome, checkerboard plan associated with the name of William Penn is usually adopted in such cases. It is not necessary, of course, that it should be adopted, and it seems to me obvious that the checkerboard plan is needlessly tiresome, expensive, and undesirable.

To begin with, I would say that the topography of the ground ought to determine the location of the axial streets. On flat ground they would naturally be straight or only slightly curved—say east and west or north and south, though not necessarily the cardinal points of the compass. I favor the plan of having the main streets, if not parallel to a watercourse, as nearly straight as convenient and making the cross streets very infrequent.

Too Many Corner Lots

What makes so many cities ugly is that a number of real estate developers have proceeded on the policy of getting as many corner lots as possible, the assumption being that the value of the corner lot is one and one-half times the value of the lot with only one frontage. Often the plan of the city is made ugly and inconvenient by such a developer in getting the maximum number of these corner lots, but in doing so injures the city and causes additional cost in transportation and maintenance by these frequent intersections.

I am informed by professional developers of urban and suburban areas that experience shows corner lots are not always desirable, because people object to the intense automobile traffic resulting therefrom. However, in leading shopping centers there is a disposition to shorten blocks and increase the number of corners, thereby increasing the amount of street area for the parking of cars in relation to the amount of land occupied by shop frontage.

Streets

My idea, as above mentioned, is that the main streets in one direction should be straight or nearly straight, as prompted by the terrain or the existence of a stream or watercourse. After the main street, or streets, have been laid out, the other streets will be approximately parallel, but with the idea that the cross streets should be infrequent and solely for convenience. Briefly, following such a rule would result in lower cost of street and sidewalk construction, sewers, water pipes, etc.

Connections with parallel or nearly parallel streets can be made by comparatively infrequent streets, and sometimes even by pathways. Cross streets should be 1,000 feet or more apart, with intermediate pathways between. Distance between parallel streets should be not less than 225 feet, and as much more as may seem desirable if larger and deeper lots are wanted in certain parts of the city, or if a central parkway strip, or playground facilities, are provided.

In making long blocks, an effort must be made not to conflict with the main flow of traffic, but the long blocks should lead into main highways which run into objective centers. It is conceded that longer blocks greatly reduce street improvement costs and increase the number of front feet of property for sale.

Experience seems to show that people are not willing to pay for deep lots for moderate priced homes; lots of 125 to 135-foot depth for $10,000 homes being the average desired in most cities, with 110 to 125-foot depth for homes in the $5,000 to $6,000 range; whereas, in subdivisions for larger homes, lots as deep as 200 to 250 feet are desired.

I cannot help believing that cities thus laid out would be more interesting, and would cost less to build and maintain.

With this quotation from Edward FitzGerald's translation of "Omar Khayyam" as a text, *The American City* recently asked the past-presidents of the American Society of Planning Officials, American Planning and Civic Association, and American Institute of Planners to state brefly what kind of cities they would build if they had the power to do so.

Four of the replies appear on this and the next two pages. The first installment was published in the January issue, pages 37-39, and included the following: *Putting First Things First in Urban Development* by Benjamin H. Kizer, American Society of Planning Officials; *To Grasp the Opportunities Afforded in Post-War City Planning* by Lawrence V. Sheridan, American Institute of Planners; *To Promote Things Clean and Decent With Opportunity for All* by J. Horace McFarland, American Planning and Civic Association, and *Omar Khayyam re The American City* by Jacob Crane, American Institute of Planners.

Three Basic Barriers That Must Be Tackled

By MORTON L. WALLERSTEIN
Attorney at Law
Past President, American Society of Planning Officials

POST-WAR plans almost universally emphasize that cities must build up rather than continue to tear down their human assets. So removal of blighted areas, handling of leisure time problems both for adults and children, and increased educational facilities naturally stand in the vanguard of projected improvements. Cities need to develop as areas that will bring comfort and ease to their residents.

Volumes have been written about the sort of cities we want—all singularly free from real disagreements. With long-term financing an important part of all planning, we have forgotten certain fundamentals that block our universally desired progress. It is these to which I desire to point.

Rural Domination

Cities cannot exercise any power other than that derived from their creator, the state. They are naturally bound by the state's philosophy, which is largely molded by rural people who invariably seem to exert the greatest influence over the elected representatives. Upon inquiry into the philosophy of the rural population, we find that in their difficult search for bread and butter they meditate chiefly about their economic lot. That, unfortunately being very generally true of a large proportion of our agricultural population in every state, probably accounts in large measure for their very unprogressive outlook.

From such an outlook two results follow and react in the nature of a vicious circle. One is that because of the narrow horizon of the rural interests as a rule, state legislation and action with regard to the urban areas have been backward. Because of the serious economic situation of the rural trade areas upon which they are dependent, the cities have not yet had the wealth with which to meet their real development needs. Therefore, the municipal post-war problem is in part agricultural.

Add to this the fact that, to the average municipal dweller of the employer class, any increase in governmental activity is a revolutionary step toward collectivism and the imposition of an unbearable financial burden. Such employers always feel that the wherewithal comes from their pockets, although usually it is actually passed by them to the ultimate consumer. They seldom consider that sensible public expenditures produce assets.

Municipal Ledger's Asset Page

Paradoxically enough, one of the serious drawbacks is that public officials, including especially those engaged in municipal management, have developed a single-eye toward low comparative expenditures and low tax rates. Their interest in the progress of government has as its major criterion the dollar mark. Like the businessman, little do they recognize that there is an asset page in the municipal ledger.

Therefore, for real post-war municipal progress of more than a fleeting nature, cities must, (1) take positive steps to aid in advancing the economic welfare of their rural trade areas; (2) urge business men to relinquish their phobia of opposing any governmental expenditure regardless of the asset value of what is thereby produced; and (3) have their own public officials give up their miser complex.

Clover-leaf intersections, housing developments, neighborhood improvements, increased leisure-time facilities, and all sensible urban redevelopment will continue in some measure to be beautiful pictures in planners' post-war albums, unless the three basic barriers mentioned are realistically and immediately tackled.

Planning for Adjustment to Changing Conditions

By EARLE S. DRAPER
Deputy Commissioner, Federal Housing Administration
Past President, American Institute of Planners

NO difficulty is experienced in defining and describing today's "ideal city," whether we are to build anew or to work towards improvement of an existing city. In the physical aspects—affecting both appearance and practical functioning of the city—we know that a basic question is that of proper land use and the proper arrangement of transportation and utilities to serve each use. Private and public land uses alike require careful study and planning. We know that developed areas should not be too densely settled, showing too great building coverage of the land, and that there must be adequate open areas to meet the diverse needs of the population. Cities are awakening to the wisdom of influencing physical growth and adjustment by means of the master plan and intelligent zoning. On the economic side of the picture, the city should study methods which will enable it to chart a course to keep it financially in the black after providing for needed services in the fields of community health and welfare. The public is now widely aware of certain services and facilities attached to group living which add much to the economy as well as the convenience and comfort possible to urban populations.

The principal difficulty, as I see it, is planning the city to make possible an adjustment through the years to meet changing conditions.

In this brief statement conclusions must be presented with a minimum of discussion. I will therefore summarize:

I

We must accept the fact we cannot foresee and confidently plan the use of land so as to be sure of satisfactory living and working conditions 25 or 50 of 100 years hence. A desirable pattern of urban development today may be quite unsatisfactory 50 years from now. Both the house and the community of 1893 lack much to meet the needs of 1943. What then? Defeatism and no plan? No, but a plan which considers not only the needs of today but the necessity for adaptability in future years is essential. We need to develop easier ways of changing man-made patterns of land occupancy than exist in this country now, so that as the future brings new conditions we may not be frustrated as we are today—at least in a measure—in adapting the ground plans and buildings of our urban areas and their neighborhoods to new conditions.

In the case of newly planned cities, this necessarily means more effective and continuing control of land uses by the community. For existing cities and

new urban developments alike, more intelligently exercised land use control is clearly called for. We need new tools and methods to correct maladjustments and to develop new attitudes, in order to resolve the conflict of public and private interests and to chart a constructive program, in which officials and citizens may join to the assured benefit of our urban communities.

II

City patterns are most satisfying and most durable that are least restrictive of movement and most protective of the community interest. Although it is idle to wish for a return to the early New England communities with their town commons and open space, the spacious qualities, attractiveness, and livableness of the early communities suggest ideals, which in terms of today and with changes to meet present conditions are a better basis for modern living than the patterns of high density and intensive development that have characterized the growth of cities from the middle of the nineteenth century on.

The lesson from this is fairly clear—to conserve and properly use our urban resources intelligently and to serve more wisely the real needs and desires of our people, we must avoid excessive densities and conditions of overcrowded human occupancy of land. We must avoid excessive building coverage and over-intensive use of developed land which leaves relatively little freedom of movement.

III

The city's natural or physical assets must be embodied in the city plan and given protection for the use and enjoyment of the entire community. These assets will outlast changing fashions of the day and remain a constant source of enjoyment and refreshment to the citizens through many generations. Such features as rivers and lakes, scenic features of all kinds, must be protected and preserved. Community use of outstanding natural features need not require large expenditures, but once damaged or destroyed or out of control they are seldom recoverable, nor can adequate substitutes be readily provided.

It is important that the community's interest extend to consideration of problems of health, morals, and welfare which may be implemented through the use of the police powers of the municipality. Yet no less important even than these matters is preservation of community control of priceless natural assets in the physical layout of the city by means of careful design and skillful guidance of use of all the community's land—public and private.

Finally

Finally, to mention political considerations or what can be done to get community action, democracy has advantages to compete with the apparent ease of establishing rigid controls which sometimes are claimed for autocracy. The latter, it is true, can make rapid decisions. It also, as has been made clear, can make very grievous errors. Democracy may on many occasions require a little time to act, but its conclusions are intended to be representative of popular will and, at their best, may express the genius of the individual citizen of every rank and circumstance.

To the extent that the people participate in the worthy undertaking of developing a real and humane community, a healthful enlightened community spirit and tradition, that community's city plan and development program may take on the qualities of stability and permanence as an expression of democratic ideals, and afford a demonstration of what large stores of yet untapped community strength are to be found in an awakened and unified citizenry.

Citizens' Planning Councils Can Help Solutions

By PHILIP H. ELWOOD

Head of Department of Landscape Architecture, Iowa State College
Past President, American Society of Planning Officials

THE time for talk is over; cities must plan or replan now, not for revival and extension of the patterns of the past, but for a "new day" for sound urban business and pleasant healthful living.

The rebuilt city might in part be both decentralized and recentralized, with adequate mass and personal transport of all types. Fewer streets, longer blocks, less pavement, more parks, less noise and dirt, and more open space, sunshine, and trees shading the now blazing downtown streets giving comfort to office dwellers and shoppers alike. These and many other features will, I believe, become the pattern of our future cities.

The planning machine itself needs a major overhauling before attacking the present complex problems of our congested uneconomic obsolescent, ugly downtown areas and the sprawling suburbs often blighting an otherwise lovely countryside. We can't wait for bombings to bestir us from our complacency and selfishness. Some have envied London and other cities for the necessity thrust upon them for replanning large areas.

Our cities we know must be replanned and rebuilt if they are to survive. If we are to deserve democracy and local self-government the planning function itself must be given more official recognition. City planning and planning commissions never, or seldom, have really functioned in the United States as an integrated part of local government. This situation must be changed as a first step. But how? What is needed to do this? Surely not just more officially isolated, poorly financed planning commissions with more pressure, piecemeal patchwork planning or the wishful optimism of local businessmen. These may be better or worse than nothing, depending on how the individual pieces can be fitted into a comprehensive master pattern based on reliable historical facts on population, taxation, industry, transportation, housing, recreation, health, and employment.

Vision, Audacity, and Courage Needed

Someone must have the vision, the audacity, and courage to envision the future—even brave enough to face self-centered so-called planners who may glibly yell "starry eyed" dreamer. Some of these nearsighted critics see only public works as the answer to transition reemployment. Others think private enterprise alone can do the job by piecemeal rebuilding; of course with ample direct or indirect local or other governmental subsidies. Neither alone is sufficient. Why not have a truce and all work together to win the peace in our own cities where our decendants may live long and well? Isn't that a sufficiently challenging objective?

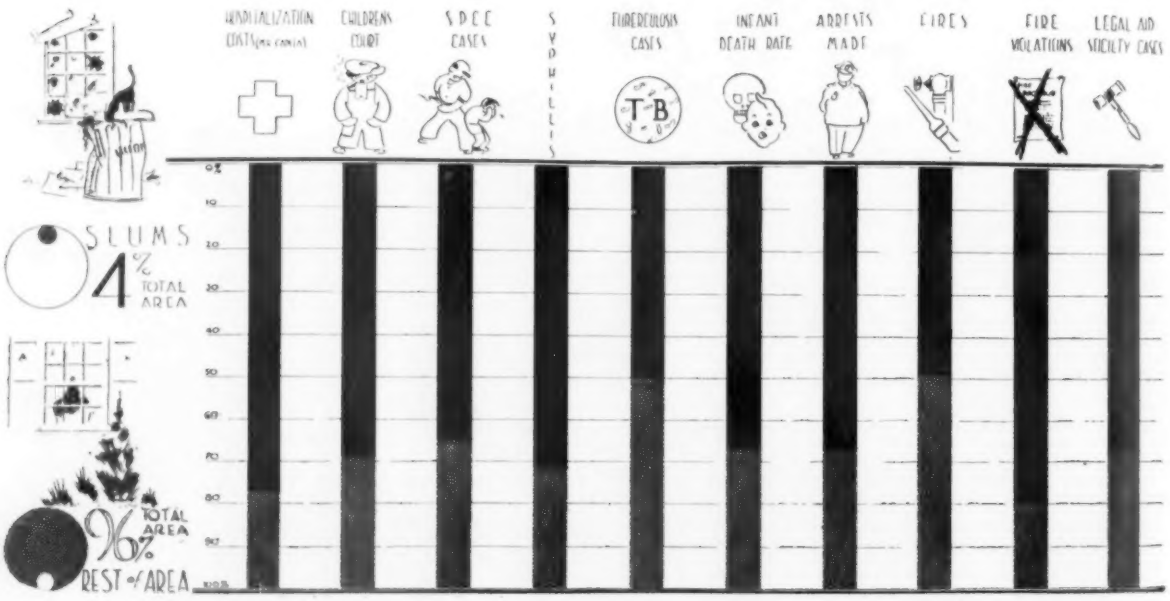
Without vision a people perish. There is such a thing as realistic dreaming. You can be practical and keep your feet on the ground while intelligently looking ahead. One way, it seems to me, to overcome these and other discouraging obstacles to intelligent long-range planning is for the citizens themselves to take up the cudgels as well as the banners and torches which their timid and perhaps tired colleagues have dropped, and

carry on the long hard task. It will take years and will involve many setbacks and discouragements. Few wars have been won without losing some battles, even campaigns. The front line may waver, even recede here and there, but with compensating advances elsewhere. The real test of government by the people is at stake in our cities right now. We can't say to our city officials, "It is your job, we pay you to run this town, don't bother me, I'm busy planning my own business." That attitude never will either plan or build a great city. In its place we must have widespread understanding of the problems and general informed support from all good citizens concerned with the future of their community as well as its present welfare.

All of which may be accepted as gospel truth, but how is this to be accomplished? There are almost as many effective approaches as there are cities; each has its strong educational, religious, financial, industrial, and commercial channels and resources for leadership.

Let no one sit back and complain if another organization or group has the fortitude to step forward and boldly assume the leadership necessary. Our returning soldiers and war plant workers won't care who is responsible for the newly created jobs or the fine spirit of reconstruction they find after the war; but breezy forebodings of the devastating storm to come, of just indignation for complacent inaction, are already drifting back from overseas. So get the citizens representing every important group or activity on a citizens' planning council and give them trained, experienced, and continuing guidance. They should be able to discover the solutions to problems of legislation, taxation, finance, and physical "master planning." Surely the energy, the inventive genius, and the dynamic leadership that have created the world's greatest war production in history, if given the opportunity, should be able also to accomplish miracles for peace and rebuild, not only our cities, but the face of our great land. The results will be an inspiration for future generations.

Dramatizing The Cost of Slums



PUBLIC-SPIRITED citizens of one of New York's Westchester County suburbs, White Plains, are properly concerned over the fact that, even in this fine suburban community, growing areas of blight and slum are to be found. Believing that the problem cannot be solved by private initiative alone, some of these citizens organized some four years ago the White Plains Committee for a Housing Authority.

Some excellent publicity has been issued by this committee, including the striking chart of which an adaptation is here shown. Not only are White Plains and other cities subsidizing their slum areas through such human costs as this chart depicts the economic costs in delinquent taxes and depleted property values are increasingly. Forcing recognition of housing and neighborhood improvement as an outstanding need for the post-war years.

• See also page 15 of this issue.

New York Celebrates Housing Week, May 21-27

THE Citizens' Housing Council of New York, in cooperation with more than 50 of the leading business, civic, welfare, educational, and religious organizations of the city, is organizing a Housing Week for the city to be celebrated May 21-27. Senator Robert F. Wagner and Mayor F. H. LaGuardia are serving as Honorary Chairmen.

The week is based on the fundamental principle that New York will only obtain the post-war housing it needs if there is an enlightened demand and an intelligent grasp of the roles which free enterprise and public aid can and should play in the drama of the housing and community reconstruction program.

Through public meetings, exhibits, radio programs, newspaper articles, essay and poster contests, etc., the attention of the people of New York will be directed, in a more dramatic way than ever before, to the urgent need of providing proper homes in decent neighborhoods for all families and individuals in the post-war era and to the necessity of working out means to achieve this aim.

Full information may be secured from the Citizens' Housing Council of New York, 470 Fourth Avenue, N. Y. 16, N. Y.

Small City Parks for Community Use

How Neighborhood Parks Meet Public Needs

By MARJORIE SEWELL
Landscape Architect
Philadelphia, Pa.

THE value of the small city park cannot be overestimated in the lives of our future citizens, to provide wholesome recreation, to offset anti-social gangs, and to furnish also relaxation areas for apartment or tenement house dwellers right in their own neighborhoods. Especial attention should be given young children and old folk who cannot travel long distances to larger parks. Municipal officials and taxpayers are coming more and more to realize that a park is not simply an ornamental luxury, but that it is also a practical asset and laboratory for the development of good citizenship and human character.

The design of the park must fit its surroundings and must have the function of definite and active community service. But remember that your problems must be developed along practical lines.

The following suggestions are for the aid of municipalities wishing to establish small city parks or to develop parks already in existence.

Trees

To give relief from the baking heat of city streets and to provide the refreshing shade of a garden area, trees are of the greatest importance. These can be planted solidly in rows, staggered 20 feet apart and sheared to a uniform height to serve as a heavy canopy of foliage when their branches interlace.

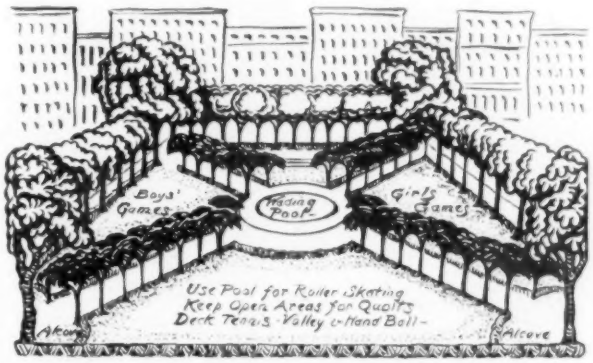
Park trees can be planted in double or quadruple rows on each side of walks, as close as 15 feet apart, so that their limbs and branches resemble the columns and arches of a shaded cloister.

Shade trees also can be used as a screen around the perimeter of the park to blot out the surrounding buildings, and grouped as background for statues and fountains.*

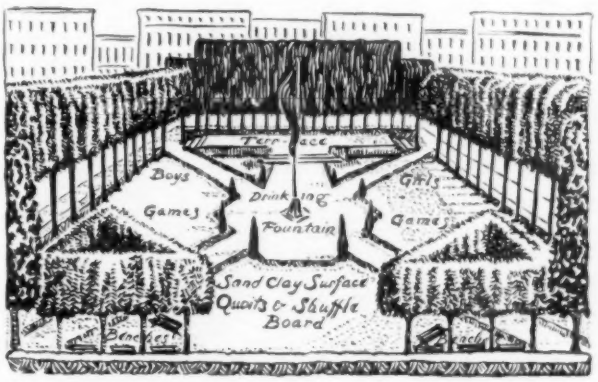
Hedges

Hedging of hardy, prickly, and soot-resisting shrubs are most useful for outlining paths and open areas, for protection in place of fencing (which usually gives that backyard effect to a park), and as ornamental ribbon borders to emphasize the park design.

The cost of upkeep can be reduced if low-growing shrubs are selected—only 2 to 3 feet high when mature. Most old-fashioned gardeners insist on trimming everything in sight, whether or not the tips of the branches are covered with buds about to burst into bloom. The new electric hedge shears have made this barber-shop cut even more popular than ever as an outdoor sport. The helpless designer, whose guidance and authority are ended usually at the dedication exercises of the completed park, often watches with dismay while his prize park is ruined by the wrong kinds of maintenance. So you might as well give the old gardeners something to trim, and plant such tall-growing hedges as privet, hawthorne and forsythia, the upright type which can be sheared into quaint topiary shapes such as roosters, peacocks, and urns like those decorating the entrances to old English estates.



A NEIGHBORHOOD PARK with Shaded Walks
Marjorie Sewell - Landscape Architect -



A NEIGHBORHOOD PARK with Sheared Foliage
Marjorie Sewell - Landscape Architect -

Clipped hedges may be trimmed high to form gate posts. Upright forsythia will create striking ribbon borders of yellow in the spring, since the flowers are borne all along the twigs instead of just at the tips.

For hedging to bound the park and the border paths, used read leaf barberry trimmed to 3 feet for clear vision across the park. An ornamental plant suitable for marking intersections of walks in the park is glossy abelia which has attractive foliage and flowers. For low hedging, clip Regel's privet to desired size and shape. For ground cover which will give a mass of blue flowers from spring until fall, alternate leadwort between myrtle to form a solid mass. The myrtle will stay green all winter.

The accompanying sketches show two different types of planting for a simple geometrical neighborhood park design, using the list of plants already outlined. City plants have a harder struggle for existence than those

* For classified varieties hardy under city conditions, see "Garden Design," by M. S. Cantley (Dodd, Mead & Co., 1935).

growing under country conditions, but it is possible to produce immediate and very satisfactory results in city planting as has been demonstrated in the large court of the Phipps Garden Apartments on Middleburgh Avenue, in Long Island City, New York. Besides the luxurious growth of trees, shrubs, and ground cover in this public garden, it is interesting to note that the management has no trouble from vandalism because all the neighborhood takes a pride in the flowers and has united in an effort to protect them, which explodes another theory that city folk always tear flowers off flowering trees and shrubs. Even the children in this community help to guard the flowers because they helped to plant them under the direction of the workmen.

Paths

Since the longest distance is from corner to corner, your small city park will look bigger if you develop it with a pattern of digonal paths. Also there are always a number of influential cross patches in every community who have never enjoyed life nor loafing and hate to have the city taxes wasted on parks for you and me. These pompous persons are always in a great hurry to get somewhere, so you had better help save their precious time by giving them diagonal short-cuts through the new park from corner to corner. But never under any circumstances let anybody drive through a small park or its use and safety will be entirely destroyed.

Then there are many thoughtless, good-natured human beings who just like to wander round and round, arm in arm, aimlessly humming the same tune. They are very low-brow as compared with the high-speed health enthusiasts who have to take a constitutional before and after work, along with an apple a day. Therefore the cautious designer will provide plenty of paths and make them plenty wide. The town of Radburn, N. J., which is famous for its pedestrian population, has 7-foot park walks which give ample opportunity for the rising generation on wheels of all kinds—from scooters to bikes. Unfortunately, concrete proves to be the cheapest durable walk material to date, but most of its smugness can be eliminated by leaving off the surface finish (which also saves expense) and by laying it in one course with the coarse aggregate showing. If fine-screened gravel is spread over the top before it sets and some lamp black and yellow ochre worked into the mixture, the general effect is very like that of a good gravel walk, and still it remains smooth enough to meet the demands of this nation on wheels.

Remember that the sidewalks outside your park can be used by all types of pedestrians to increase their promenades, so do not waste any of your valuable ground space by duplicating these street walks with a parallel system of park walks just inside the boundary lines of the small city park.

Surfacings

The old-fashioned velvet lawn is as out of date and as impractical as the Victorian parlor because it costs too much in labor and materials to keep it in order. So the wise designer will spend a little more money on materials and establish an evergreen ground cover on his open panels. These open spaces are most restful and as necessary to create a finished aesthetic effect as is the blank open space around a page of text or the lettering in an advertisement. So consider your flat panels as frames and foreground for the details of your park picture. Besides, city dwellers are hungry for contact with nature and thoroughly enjoy the colors of the first spring bulbs. You can satisfy this craving by embroidering your panel of evergreen ground cover with both spring and fall bulbs which should not be dug up like bedding plants. With the cooperation of the caretaker, and the addition of a few educational signs, it is easy to gain the interest of the community, and I have never had any trouble with the children, because I always arrange a field day during which they are allowed to help plant the bulbs and then I appoint them as special guardians of the planting. And they always respond 100 percent. It certainly is worth the extra time and effort to have them with you instead of agin you!

On low banks, use hardy trailing vines and low spreading shrubs to form a dense mat, but be sure to leave short cuts, like stepping stones or ramps, for the young Indians to slide down.

Gravel, $\frac{3}{8}$-inch screened, makes an excellent surfacing for areas that get hard wear, as has been demonstrated in the public parks of Paris. It also allows the rain water to soak through to the roots of trees and shrubs — as a pavement does not; it can be used in shade as well as sun—where grass cannot; and it is much cleaner and more ornamental than screened cinders — which are very hard on the children's hands and knees when playing. Is is well to bind the gravel with a mixture of clay, equal parts, which keeps it packed down.

Brick dust, also mixed with a clay binder, gives a most attractive and colorful surface and is a good cheap substitute for the European game-court surfacing known as "en tout cas." Sand clay is probably the cheapest, next to cinders.

Since most playground surfacing is too dusty to be considered satisfactory in a city, it would be well worth while to experiment with new materials, for example saw dust mixed with an oil binder. Both city planners are playground experts should devote time and thought to this problem.

Ornamental Features

It is well to remember that small boys and girls have not changed since the days when you yourself were an agile Simian, and that there is little likelihood that they will ever change from care-free young hunters, explorers, and acrobats to little gentlemen. So every city park ought to be provided with wading pools or fountain sprays, and an excellent addition would be a real tree house and a couple of ship's rope ladders, for human monkeys.

When it comes to the selection of statues, by far the most popular are those of animals that can be ridden, such as the beloved bronze goat in

Rittenhouse Square, Philadelphia. Navy yards are ornamented with real cannon, old propellers, and flagstaffs that inspire the imagination of all young patriots to action.

Drinking fountains can be as ornamental as they are useful. A sail boat pond is a constant source of joy, and acts as a reflecting mirror for statues or ornamental planting.

Benches

Then there must be plenty of strong, comfortable benches for old owls to perch on and the large flocks of human magpies and parrots that sun themselves in all public parks, for they, too, have the votes as to how the taxpayers' money is to be spent. Good benches for this use are those along Riverside Drive and those in the New York City park system.

There has always been a difference of opinion as to whether a park bench should face the view or face the passing crowd, and the preference remains about fifty-fifty. Instead of locating them in long stupid rows, it is well to arrange the park benches in small groups to form alcoves off the main paths so as not to interfere with those who take to walking as a serious sport. In these alcoves, groups of mothers with their baby carriages can gather in a congenial neighborly way and talk while watching their toddlers play. The alcoves provide a definite space so that small children are not so likely to run out of bounds. An arrangement of this sort can be found on Riverside Drive Park near Grant's Tomb.

It is advisable to widen the walks in these alcoves so that the entire space is paved. And if you do not want your pavement to be marked up with chalk for hop-scotch and such harmless games, you had better make sure that your masons lay out good designs for these games when they lay out the pavements.

A sandpile nearby will be appreciated, and to keep it from being tracked and scattered, surround it with alow, wide curb that is comfortable for very small people to sit on.

Open-Air Features

Since use or purpose should always control design, the next group of inhabitants to be considered are the stump speakers and the soap-box orators. Then there are the Boy Scouts, the bird clubs, and the neighborhood band. These all have a common trait of enjoying an audience, which means that your planting will be trampled on unless you make a provision for a hard-surfaced outdoor congregating area where the affairs of the nation can be settled or at least aired. A rostrum, a stage, or a terrace combine well with a fountain or a statue or a flag pole, and even if the rostrum is elevated only a few steps above the general level of the park, it immediately becomes a focal or gathering point for neighborhood life and community solidarity, like the "sitting steps" in front of the Public Library on Fifth Avenue and Forty-Second Street in New York City. A low balustrade will help to keep the crowd within bounds. It also has a certain ornamental value and unquestionable use. So be sure to put it on your plans—to prove that you are not loafing on the job and also that you have the taxpayers' interest at heart by labelling it as a feature to be added later and paid for by the local chapter of the D.A.R. This always keeps everybody happy.

It is also safe to locate terminals of views and important intersections of axis on your park plan as proposed locations for future statues as memorials to civic virtue and national glory so that your park will not be cluttered up by contributions of an inappropriate nature. If any public-spirited citizen, or group of citizens, suddenly wants to make a donation, you should have a list of ornamental features for them to choose from.

Every good old New England town has a bandstand on the green, and although you may laugh at the idea, still it is an excellent historic tradition and worthy of preservation in any democracy. The bandstands and plazas in our navy yards have contributed a great deal in the way of community life and entertainment. If you still insist that you don't like the appearance of bandstands, then leave off the roof. The band always stops playing and goes off for a drink and a smoke whenever it rains. Just use a canopy of shade trees instead, as was done in the case of the Roosevelt Memorial of carved limestone in the Common at Tenafly, N. J.

BENCHES for OLD OWLS-PARROTS & MAGPIES
But a TREE HOUSE
WOULD BE GREAT for YOUNG MONKEYS—

Game Grounds

It is also time the planners and town fathers should be convinced of the ornamental value and possibilities of game grounds. To date they are classified, like the backyard and the vacant lot, as eyesores which only depreciate property values. But it is not the young athletes who throw tin cans and rubbish about the vacant lot. On the contrary they often work hard to clean up and level a space big enough to play baseball or football. Of course a baseball diamond is too big to be incorporated in a small city park, but there are many other games which can be enjoyed as much in a park as on the deck of a steamer, by both old and young. Among these are deck tennis, shuffle board, badminton, push ball, clock golf, and so on. The important point to keep in mind is that the game grounds are symmetrical in shape and as flat, open spaces, they fit into a conventional or geometric park pattern. And here it would be wise to stress the importance of the rectangular shape of a small city park and the strong influence of the rectangular shapes of buildings that frame it and form its skyline. So there is no use to be a nature-faking ostrich by trying to create a little sample of virgin forest in the middle of a sooty, gaseous modern city, nor to go sentimental and serpentine like the Gay Nineties. The shape of the city park and the character of its surroundings are part of the limitations and one of the most important controlling factors in your park design next to the cold hard facts of the financial situation.

Maintenance

CARETAKERS—Instead of an old-fashioned gardener with a keep-off-the-grass complex and a mania for trimming flowering shrubs, it would be

wise to select a caretaker who would appeal to the idealism and ambitions of the younger generation, such as a retired fireman, engineer, electrician, or carpenter—anyone in fact who has an open mind, an interest in and sympathy for children, who is conscientious, and who will follow a few simple rules for the care of the planting, instead of trying to improve it by adding such green-house atrocities as castor oil beans and cannas or red salvia. If he appears to loaf on the job and stops work to talk to small boys and girls or to mend their kites and bikes, all the better. If he gives them rides in his wheel barrow and lets them help rake leaves and weed or water plants, then he is developing their initiative and responsibility as citizens and he will become the childrens' idol and help toward building their characters as effectively as any trained nursery school leader. I have tried this experiment and I have proved that it works well.

Published photographs and reports in the local papers of the work as it progresses, as well as plans and elevations, will create favorable interest and turn an experiment or a political job into a model educational project. Invite groups of citizens both young and old to help plant and develop the small city park (even if your own workmen could do it faster and better), and you will benefit by their personal interest and protection in its after care.

Comfort Stations—To preserve the common decencies of civilized life it is absolutely necessary to provide convenient free toilets and lavatories in every park, no matter how small. The French have installed a kiosk on street corners in Paris, circular in shape, with a roof, and the outer walls are decorated with theatre posters. It is as common a sight as a news stand.

In American cities the comfort stations require flush toilets connected with the city sewer system, which means heating a building to keep the plumbing from freezing in the winter. For this reason the best kind of caretaker is not a matron but a plumber.

The importance of the comfort station becomes overemphasized if it is the only building in a small park. It can be planted out, but another solution would be to locate it underground.

Concessions — Whereas large parks can and should be provided with concessions for purposes of revenue, as has been demonstrated in the Westchester County Park System and the City Parks of New York, the space required for concession buildings prohibits their introduction into the design of the small city park. Let those who want to go shopping for balloons, hot dogs, ice cream cones, and sporting equipment or souvenirs walk to the local shops to spend their pennies, and keep the hot dog stands, boot blacks, and newsstands out of your neighborhood park —keep them all out except the hurdy-gurdy man.

Financing

If there are not sufficient funds to develop your park all at once, then list the different aspects of the work in their order of importance as follows:

1. Necessary for immediate development
   (a) Suitable for unskilled labor
   (b) Dependent on contract labor
   (c) Requiring the services of technical experts
2. Future additions pending future appropriations
3. Items that can be donated by individuals or civic groups
4. Items requiring community cooperation and support

Cost Estimates

Before the planting plan can be completed, it is necessary to estimate the quantity of topsoil required and to realize that topsoil will cost at least 50 percent of the price of the plants plus your charges for excavating old rubbish and subsoil.

After a little practice and experience in a given locality, the designer should be able to systematize his planting program to such an extent that he can estimate the cost of a tree or shrub when planted. This saves the headaches that always come from adding extras to budgets. To the cost of the individual plant as purchased in a nursery, you must add transportation or delivery charges, cost of topsoil, fertilizer, mulch, cost of labor for planting, pruning, staking, and wiring, or materials for same, and of maintenance and watering until all planting operations are completed. One of the greatest protections to all concerned is to have the planting handled by a reliable nurseryman on a contract basis and to add 10 percent for his written guarantee to replace all losses free of charge within the first year.

One aspect of planning which cannot be too strongly impressed upon your mind is that you must have your community with you, step by step, even though it means a lot of extra time devoted to publicity and to arousing interest and cooperation. Yes, you are a public servant and therefore open to attack in spite of your college background and ethical standards. So be a good sport and play the game, and make sure you understand what the public needs, which is often very different from what it thinks it wants or even from what you think it ought to want.

Author's Note.—For descriptions and illustrations of the park plans mentioned in this article, see "Garden Design," by M. S. Cautley (Dodd, Mead and Co., New York).

Building Codes As Obstacles to Housing Progress

THAT the restrictive building codes in force in many cities and states are a major obstacle to housing progress is one of the findings of a special research staff of The Twentieth Century Fund, as reported in "American Housing: Problems and Prospects," published last month. The research was directed by Miles L. Colean, architect, who resigned as Assistant Administrator of the Federal Housing Administration to conduct this survey, and is now Vice-President of Starrett Brothers and Eken, of New York.

Preparing a proper building code involves three main problems, the study points out: "First, there is the difficulty of reconciling engineering and social ideals with economic realities. How 'fire-safe' can we afford to make our dwellings? How elaborate can we make our equipment requirements and still build low-priced houses? No matter how correct they may be technically, codes that raise costs to a point where only a few can pay for new housing defeat the objectives of proper public regulation. They simply result in the retention of quantities of substandard and old housing.

"The second code problem is that of wording the requirements for floors, walls, structural members, etc., so as not to exclude sound new building methods and materials. This can be solved effectively only by establishing performance requirements rather than specifications for the parts of a building —thus, not the thickness and materials of a wall, but the wind load and live load it must provide for, the duration of fire it must resist, and so on. . . .

"The third problem consists in providing for special local circumstances without hampering the operation of industry on a wider basis. Obviously California must provide special bracing for earthquakes, Florida for hurricanes, and northern cities for heavy snow loads. Most of the justifiable local differences are limited, however, to a few important matters."

Utility Earnings Produce Debt-Free Community

while operating garbage and refuse disposal service, a sewage-treatment plant, and water and electric utilities

By G. H. COVEY
Secretary, Girard, Pa.

IN 1899 Girard Borough embarked on its first municipal ownership enterprise by installing its own water system with a standpipe and one well with gasoline-operated pumps. Today, with a population of only 1,732, we have a water works with three electrically-operated deep-well pumps and an additional water tower. Moreover we have our own municipal electric plant, a sewage-treatment plant, a refuse incinerator and a garbage and refuse-collection system. Most important of all, the Borough is virtually debt free.

Of all the utilities we own, perhaps the one that gives the most satisfactory return is the electric utility. This started operating at the same time as the water system and originally utilized a steam-operated power plant. We owe our present plant and good financial condition to the foresight of the city fathers of that time who, by installing the electric service for the Borough, preserved its rights to furnish this service if desired.

During the last war the price of coal advanced so much that we found it cheaper to purchase current from the local private utility than to produce it ourselves. Consequently, we closed the old plant and built a line extending one-half mile out of town to connect with the power company bringing in the current on our own lines to serve our distribution.

Built Diesel Plant

In 1936 we decided that we could operate a diesel engine power plant for less money than we were paying the power company. At that time we sold $36,000 in bonds and in March of 1937 we completed and put into operation the first two units consisting of 300 hp Fairbanks, Morse diesel engines directly connected to 200 kw generators. At the time the diesels were installed the rates to residential and commercial users were: first 25 kw @ 8c; next 25 kw @ 5c and the balance @ 3½c, but within the first year the rates were reduced to 7c—5c—2½c with a 5 percent discount if paid by the 15th of the month.

The lower rate increased our consumption so that by 1938 we needed more capacity and $10,000 of bonds were sold and the third unit installed. In 1941 the fourth unit was installed without a bond issue.

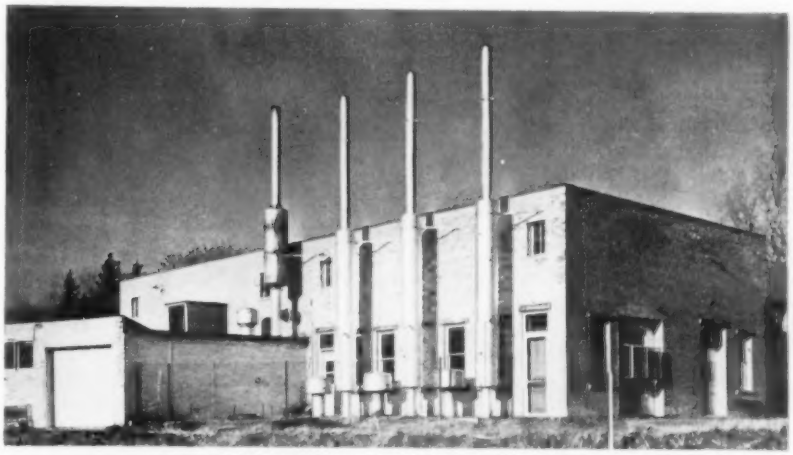
Today our power plant represents an investment of $101,225 which is clear of all indebtedness. The lower bracket users of 50 kw or less have decreased about 60 percent and the ones of 50 kw and up have increased about 55 percent. In 1938 we had 83 electric stoves, today we have 235. This increase in current use, we feel, is due chiefly to the reduction in rates. Our street lights are free to the Borough, but figuring them at the rate paid by the surrounding towns it would cost the borough $8,680 or a tax rate of over 8½ mills; and our present tax rate is only 5 mills.

The Water Department

The water works utilizes three Sterling deep-well pumps with a capacity of 50-gpm, one Fairbanks, Morse 100-gpm, and one 125-gpm. Both the water and light departments are under the management of the Borough Council.

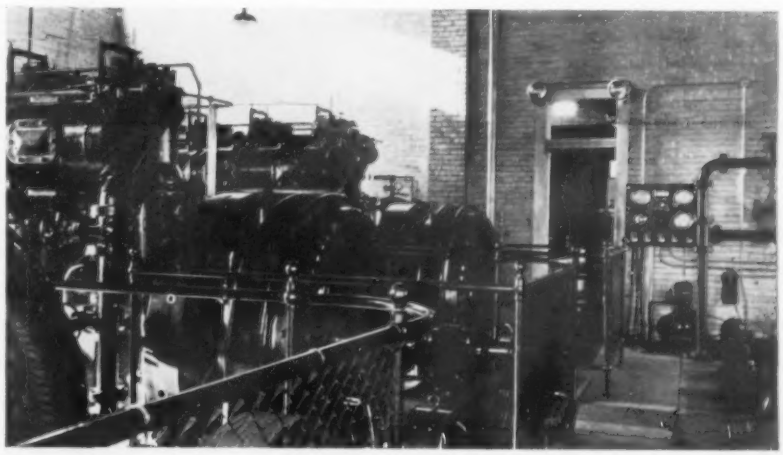
If it were not for our utilities our police, fire, street, sewer departments would cost another 12 mills tax.

In the years from 1937 to 1943 in addition to paying for the power plant we spent $51,000 on improvements in our water system, sewers, disposal plant, and pavements. Of this sum there was a bonded debt of $15,000 not due until 1948, but became callable on January 1 and has since been paid.



ABOVE: *The Girard Borough municipal electric plant.*

BELOW: *An interior view showing three Fairbanks, Morse diesels furnishing the power*



How to Build Scale-Free Pavements

Summarizing recommendations of the Portland Cement Association on the use of air-entrained cement

IN northern states where climatic conditions are severe, some concrete pavements have evidenced surface scaling caused by severe frost action, by direct applications of flake calcium chloride or rock salt to remove ice, or by repeated applications of granular materials impregnated with these salts. Increasing public demand on highway departments to keep roads open to traffic and to provide safe traveling conditions during winter months has in recent years led to widespread use of such salts, a practice which has been primarily responsible for the development of this scaling problem.

Extensive researches and field experiments have shown that concrete produced with air-entraining portland cement has excellent resistance to severe frost action and immunity to salt applications, whereas concrete made with the parent portland cement, containing no air-entraining material, under the same conditions may be seriously damaged.

As a result of this extensive research, the Portland Cement Association recommends the use of air-entraining portland cements for the construction of concrete pavements in areas where severe frost action prevails or where the repeated application of sodium chloride, calcium chloride or granular materials impregnated with these salts is anticipated.

Reduces Concrete Weight

The amount of entrained air reflects itself in reduced weight per cubic foot of the freshly mixed plastic concrete and also in reduced strength, as compared with concrete of the same proportions and consistency made with the parent portland cement containing no air-entraining material.

Best results with pavement mixes, taking into consideration both durability and strength, are obtained when this reduction in weight is not less than about 3 pounds nor more than 6 pounds per cubic foot. Research and field experience shows that the above stated lower limit will give the required resistance to salt applications, and that going beyond the upper limit results in no appreciable improvement in durability but is accompanied by some additional and unnecessary reduction in strength.

Flexural Strength Lower

The flexural strength of air-entraining portland cement concrete may be from 10 to 15 percent lower than that of normal concrete of equal cement content. Even with this difference, the strength obtained with the usual paving mixes is ample for the structural requirements of pavement slabs; however, if deemed necessary the loss in strength may be restored by an increase in cement content. Compensating for the slight decrease in strength is the improved workability of the concrete made with air-entraining portland cement. The platsic concrete has a fatty appearance, is cohesive and somewhat sticky, but may be handled, screeded, and finished with ease. Segregation and bleeding are greatly reduced, if not entirely eliminated.

In designing air-entrained portland cement concrete mixtures, consideration must be given to the increased volume of mortar resulting from the bulking effect of the entrained air. Advantage may also be taken of the inherent workability of the concrete resulting from the fatness and cohesiveness of the mortar. These factors permit some reduction in the quantities of sand and water commonly used in mixes designed for portland cements containing no air-entraining materials.

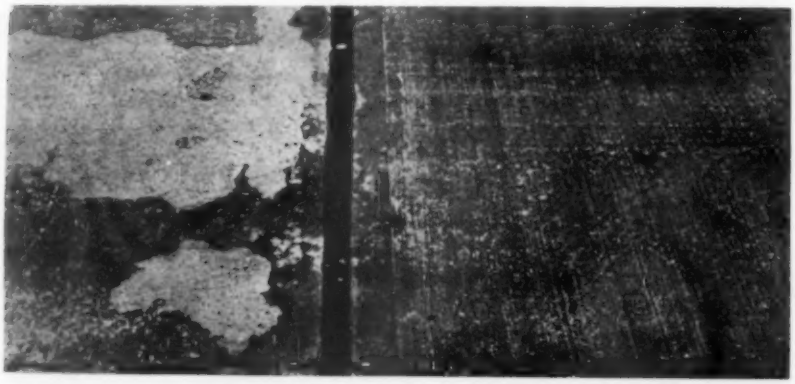
Taking as a criterion concrete mixes normally used for cements containing no air-entraining materials, a reduction in the batch weight of the sand by an amount equivalent to about 3 percent of the total weight of both sand and coarse aggregate should, under average conditions, very closely compensate for the entrained air. This reduced amount of sand and about ¼ gallon less net mixing water than normally used per sack of cement are suggested for incorporation in the first trial batches. Observations of the mix should then be made to determine whether further adjustments in the sand content, or in the amount of sand and coarse aggregate, or in the water content, are necessary to obtain proper workability and consistency. Yield tests should be made and used as a basis for further correction in the mix to obtain the specified cement factor.

Proper Mixing Time Important

The mixing time for normal portland cement concrete (1 minute), usually specified when standard revolving drum batch paving mixers are used, is also adequate for thorough mixing of concrete made with air-entraining portland cements. Inadequate mixing will not permit entrainment of sufficient air in the concrete; and conversely, prolonged mixing is unnecessary and may in some instances tend to increase the entrained air beyond the limits which are desirable for adequate flexural strength.

Finish Concrete Promptly

Concrete made with air-entraining portland cement can be readily handled and spread because the mix is very workable, cohesive, and does not readily segregate. In most cases advantage may be taken of this improved workability by reducing the water content without impairing the placeability of the mix. The mixture must be kept in the plastic range to insure entrainment of air in the concrete and the



Air-entrained cement shows its effectiveness on this example of concrete paving. The same construction was used throughout except for the slab to the left of the extension joint which is of normal portland cement.

consistency should be adjusted to give satisfactory placement under job conditions and with the equipment being used.

Finish Concrete Promptly

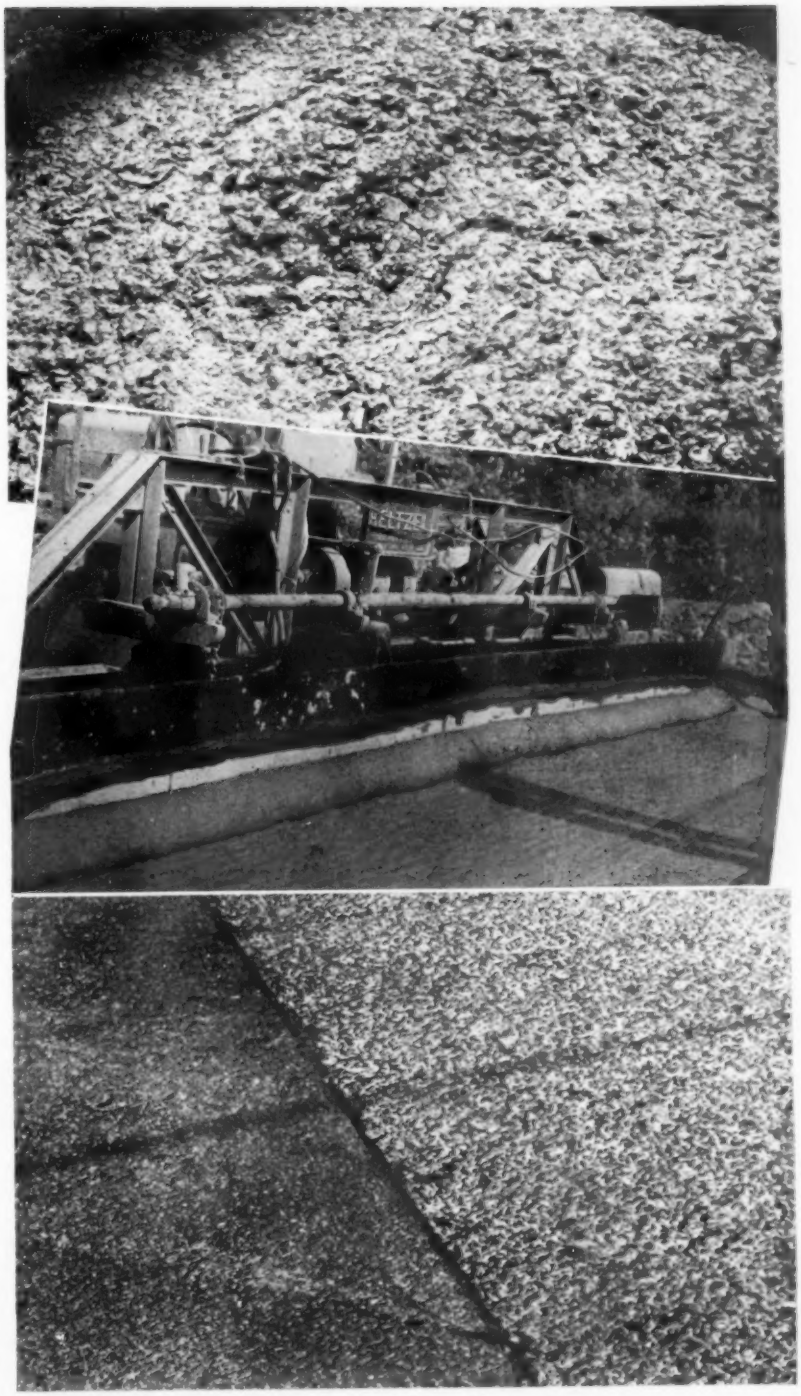
Concrete so made is almost free from sedimentation or bleeding. As a result there is little free water on the surface for lubrication during finishing operations. This makes it necessary to carry out finishing operations without delay, or else drying will harden the surface and hinder satisfactory workmanship. The absence of free water on the surface is more critical at high temperatures, when the relative humidity is low or when the wind is blowing at high velocity. This condition may at first appear objectionable but after operations have been adjusted to the material, this characteristic offers distinct advantages. Finishers are able to follow closely behind the mixer, long waits and overtime at end of the day are avoided and early protection and curing are permitted.

Under some conditions, air-entraining portland cement concrete, being more sticky than normal concrete, may adhere to the screeds of the finishing machine and cause a "torn" surface. When this occurs, it may be readily overcome by increasing the transverse oscillations of the screed in relation to its forward motion. Six to eight complete oscillations per foot of forward travel have been found to produce good results.

For hand-finishing, steel floats or steel-shod floats have in some cases given better results than wooden floats. All hand-finishing operations should follow closely behind the finishing machine.

Use ASTM Specification

Air-entraining portland cements may be specified by the buyer by using the American Society of Testing Materials "Emergency Alternate Specifications for Portland Cement," ASTM Designation: EA-C150, which under Paragraph 3(b) provides for the addition of Vinsol resin to portland cements of Types I and II during grinding, in amounts of not less than 0.025 percent and not more than 0.045 percent by weight of the cement. Similar provisions for the addition of Vinsol resin during grinding are including in the "Emergency Alternate Federal Specifications for Portland Cement" Designation: E-SS-C-191b corresponding to ASTM Type I and Designation: E-SS-C-206a, corresponding to ATSM Type II."



TOP: *How a batch of concrete made from air-entrained cement looks on the subgrade. Note its cohesive characteristics and the absence of any indication of aggregate segregations*

CENTER: *Plasticity of the mix is well demonstrated by the roll of concrete ahead of the finishing machine screed*

BOTTOM: *A dramatic illustration of the superior resistance of air-entrained portland cement concrete. Both surfaces shown in this picture receive the same heavy application of salt. The pavement in each case was subjected to the same exposure and built similar in all respects except that normal portland cement was used for the one on the right.*

Making the Garbage Can Into a Food Commando

Cities can boost wartime food supplies a full 15 percent by effective food conservation program

DID you know that the solution of that national problem, food shortages, rests largely in the hands of the cities themselves?

Careful tests by the Department of Agriculture's War Food Administration show that the supply of food for the cities can be boosted a full 15 percent by well conducted food conservation programs. Cities collect a double dividend for patriotic work of this nature because the cost of garbage collection and disposal is reduced an equal amount.

Food Waste High

Last year the War Food Administration advised us that we wasted more food than was needed not only by our armed forces but for the Lend-Lease requirements of all our allies as well. We wasted about one pound out of every four. In a leaflet issued in February of this year, the War Food Administration estimated that, if we saved only one-quarter of the food now wasted, we would add more to our food supplies than we can possibly do by further production increases.

Municipal Tests

These data are not based on theoretical, abstract conjectures. They represent, instead, the results of practical, down-to-earth tests in six separate American cities where food conservation drives were conducted. Here are some of the facts revealed in test campaigns:

Charlotte, North Carolina, which collects no restaurant garbage, had a decrease from a high of 166 truck loads of trash the first week of the campaign to a low of 147 loads the fifth week, a reduction of 9 percent the first week and 16 percent the last week.

Lansing, Michigan, measured its food-waste in pounds, carefully weighing and sorting adequate samples (27 percent) and giving the following report of campaign results:

1. A 58 to 67 percent reduction in edible food waste in homes

2. Edible food deliveries to the garbage plant dropping from an average high of 25 to 35 percent to an average low of nine percent.

Kansas City, Missouri, measured its results in tons. In spite of a population rise of from 425,000 to 450,000 for the year starting August 1, 1942 and ending August 1, 1943, garbage collections shrank 1,015 tons. July, the month with the highest collection totals, had a tonnage of 4,790 in 1942 and during the test for the same month of 1943 this dropped to 4,372 tons, a decrease of 428 tons or approximately 9 percent.

Tacoma, Washington, with a population increase of 17,541, had a per capita decrease in refuse of 2.3 pounds for the year from August 1, 1942 to August 1, 1943.

Campaigns conducted in these cities, though sketchy in most cases and

This city aroused public interest in its campaign with signs blazoned across its busy thoroughfares.

Food Facts

From plow to plate, we waste approximately one-fourth of all the food we produce:

2 *percent* is left unharvested on farms—we need more volunteer harvesters!

7 *percent,* approximately, is lost in storage and in wholesale markets—we need more cleanliness, better handling, less trimming, and sorting.

3 to 6 *percent* wastage occurs in retail stores — partly caused by consumer carelessness in handling.

6 *to* 9 *percent* of food in restaurants is wasted—we need to observe the Army rule, "Take all you want, but eat all you take."

15 *percent* of all food taken into our homes is not eaten.

Food Saved Is Food Produced

Food saved is equivalent to *extra food produced* without hazard of weather or waste of labor.

The food we waste constitutes the *greatest reservoir of unused food* anywhere in the world. It is vitally needed.

By *preventing all waste* a family of six can save food enough to feed adequately a starving Greek, or Pole—at no sacrifice to us.

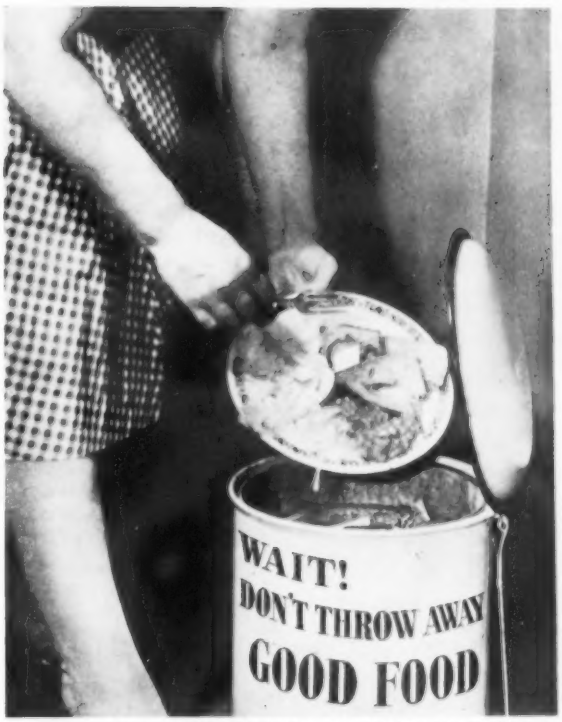
reaching only a part of the inhabitants, nevertheless served as a valuable testing ground. One city reported that its wholesale houses dumped large quantities of edible food; another, that commercial users and residents in low, and medium income groups cooperated by reducing food wastages while all others seemed to ignore the drive.

Based on the findings of these test-tube campaigns and to help meet an ever-increasing need for all food possible, the Government is now launching a nation-wide drive.

A partial list of devices proved successful in test cities includes: radio plugs, kitchen stickers given to pledge signers, menu tabs, jingle contests, posters, fillers in water and light bills, news stories, and editorials.

Here is one vigorous way for cities to bring the day of peace nearer. The average North American wastes 8.25 pounds of food per month. Lend-Lease for which there has been so much publicity takes but 0.56 of a pound of food per month from that same American's supply. No more vivid picture can be painted of the need for each citizen to stop this unnecessary waste—now.

The conduct of the campaigns is the responsibility of the state and area offices of the Distribution, War Food Administration, but according to Robert T. Oliver of the War Food Administration, the assistance of the Mayor and municipal officers in general is invaluable in creating the right atmosphere for a successful drive. In referring to the test campaigns he states, "In most of these cities the Mayor has issued a proclamation announcing the opening of the drive, and has taken an active part in public meetings. In some of these cities the City Council has appropriated funds for the printing of barbage can stickers, bumper signs, and posters to go on city cars and to be used in other ways. The assistance of the city refuse department is essential in helping to determine the amount of food wasted and the degree to which the drive succeeds in reducing wastage."



Signs on garbage cans are constant reminders to householders to save food.

PHOTOS FROM FOOD DISTRIBUTION ADMINISTRATION, U. S. D. A.

Why Water Must Be Potable As Well As Safe

By W. W. HASSLER
Research Chemist
Philadelphia, Pa.

PALATABLE drinking water, free from objectionable tastes and odors, is by no means a public whim which can or should be disregarded. It is a commodity which is essential to the health and welfare of every community.

Chlorination

The first requirement of a water supply is that it be biologically safe, and for this purpose chlorination has been almost universally adopted to disinfect water supplies. Yet no water is absolutely safe unless it is palatable. Unfortunately consumers employ their noses and palates to judge the purity of a supply. If strange tastes and odors develop suddenly, there is a mad rush to wells, springs, streams, and other untreated sources which pass taste and odor inspection but are often bacteriologically unsafe. The net result can be a definite menace to public health. In discussing the causes of past outbreaks of water-borne diseases, Professor Horwood of the Massachusetts Institute of Technology names as a cause, "The use of a polluted supply while the pure water is suffering from (objectionable) tastes and odors."

Army Experiences

Medical observers with the British Army noticed that troops preferred untreated water which tasted good, to the disinfected but foul-tasting water supplied them. Hitler's modern armies treat their drinking water with a lemon powder to improve the taste. Hence, it is evident that only in the combination of disinfection plus palatability can we have a safe "foolproof" water supply.

Last, but by no means least, is the dustry. Of the 100 gallons of water per capita supplied daily by the water works, less than half goes for personal use. The remainder is used in the manufacture and refining of various products. The beverage industry, for example, requires enormous quantities of palatable water, since any tastes and odors present in the supply would be passed on to the beverages. H. J. Levinson, Chief Engineer of the Chester Brewery, cites a 40 per cent increase in business following the elimination of tastes and odors in the water used for fermentation. Unpalatable water can cause immense economic waste as it did in Chicago during 1927, when an epidemic of trade-waste tastes in the water damaged $500,000 worth of food products.

New York City Approves a Tested Fire Retardant Coating

UNANIMOUS approval for use as a fire retardant coating over wood has been accorded Albi-Firepel "S" by the New York City Board of Standards and Appeals on the basis of parallel tests made for the purpose of obtaining an actual visual demonstration of how this flame-retardant material reacts under exposure to fire, and to evaluate the protection it gives to wood surfaces under fire conditions. The tests were conducted at the Factory Mutual Laboratories in the presence of the Committee on Tests of the Board. Also present were the Commissioner of Buildings, James H. Mooney of Boston, Mass., and the representatives of the manufacturer.

Albi-Firepel "S" is a liquid coating material for application on interior building surfaces of combustible material to which it will bind and thus prevent the ready ignition of the surface in the event of a fire. The coating material as manufactured can be thinned with water at room temperature, and is applied by either brush or spray in the proportion of four parts of material to not more than one part of water by volume. The material is a viscous liquid of a white or ivory color weighing approximately 12¾ pounds per gallon, having enamel-like properties and high light-reflective values.

Comparative Tests

Parallel tests were conducted on one untreated and two treated tunnel-like structures simulating mill-type construction. Parallel tunnels 6 feet high, 6 feet deep and 30 feet long were erected in a large brick building. These structures were erected of 2 x 4 inch studs, covered with ⅞ x 8 inch tongue-and-groove sheathing with a flat roof supported by 2 x 8 inch beams over a 4 x 4 inch girder resting on 3⅝ x 3⅝ inch posts at ends and middle of structure, all sheathing horizontal except batten doors, which had vertical sheathing. A flue of the same sheathing lined with ½ inch plaster boards was erected at end of structure leading up to and out of a window at the front of the brick building. All material used was new lumber.

Four ceiling thermocouples and three side-wall thermocouples placed in the same location in each structure recorded temperatures. The exposure consisted of a mixture of gasoline and No. 2 fuel oil (25 percent and 75 percent respectively). This mixture of flammable liquid was burned in a steel pan 2½ feet square providing a liquid surface area of about 5 square feet. Flames from the burning liquid extended 3½ feet downstream from the center of the pan. The exposure fire was snuffed out at a predetermined time (10 minutes 45 seconds each test) by dropping a hinged cover over the top of the pan. The vaporized gases escaping through the crack between the cover and the top edge of the pan were permitted to burn and preheat the cool air which was being drawn into the structure under the existing draft conditions, thus offsetting the effect of a large quantity of cold air rushing into the structure and lowering the temperature quickly after the exposure fire was extinguished.

Sufficient air for combustion of the flammable liquid and of the wood was permitted to enter the structure through a generous draft opening at the fuel pan end. Products of combustion escaped through a flue at the opposite end of the structure from the exposing fire.

RECOMMENDED *for use at points of potential hazards, such as unprotected wood around oil and coal-fired furnaces, and partitions and doors surrounding them; fireplaces and wood trim in kitchens, linen closets, shelves, storage rooms, and attics; interior wood of garages; or all exposed wood, particularly long-span wood ceilings and wood trusses, in municipal and industrial plants. Where Albi-Firepel "S" is used "small incipient fires may die out. In case of vigorous fire, delay in ignition permits additional time for emptying the building of its human occupancy and provides extra minutes for the Fire Department to reach the scene of the fire."*

Description of Test Structures

The framing and inclosing of all the wood structures was of identical construction for all tests.

1. *Untreated Structure*: This structure was erected in the same manner as the treated structure. It was even more susceptible to heat loss as there was no protection at all on the tongue-and-grooves and of course no battening of joints and cracks.

2. *Treated Structure*: This structure was erected in sections, that is, the two roof and two side panels were prefabricated and sprayed, on the exposure side, with one coat of Albi-Firepel "S" on the inside. While the structure was relatively tight it in no way approximated the special treated structure as no attempt was made to seal the butt joints and there were numerous check cracks in the boards.

3. *Special Treated*: Each board and piece of timber comprising the test structure was coated with Albi-Firepel "S" before it was put in place. All grooves of the tongue-and-groove boards were filled with Albi-Firepel "S" before the tongues were driven home. After the structure was completed an examination was made and all openings at joints were caulked with Albi-Firepel "S" concentrated, and then battened over. Following the caulking and battening the entire structure inside and out was given an additional coat of Albi-Firepel "S."

The 7-page report issued by the Board of Standards and Appeals, dated March 31, 1944, Volume 29, Number 13,[1] not only details these tests, but also describes the tests of this fire retardant made at Underwriters' Laboratories and presented in Retardant Report 2791 of March 8, 1943. On the basis of these tests the Fire Council of the Underwriters' Laboratories approved Albi-Firepel "S" for a Fire Hazard Classification as follows:

Flame spread	65	In comparison
Fuel contribution	40	with uncoated
Smoke developed	15	red oak as 100

General

The foregoing data provides a basis for the general conclusion that on wood which is readily combustible, treatment with two coats of Albi-Firepel "S" will for a variable time slow down the spread of fire by preventing the addition of fuel as represented by the component parts of a treated wood structural frame to the action of fire as well as reduce the amount of smoke

[1] A copy of the complete report may be obtained from Commissioner Bernard A. Savage, Board of Standards and Appeals, Room 1000, Municipal Building, New York.

given off. It is entirely admissible that small incipient fires may die out because of the lack of fuel such as would obtain where the wood framework was so treated and protected from the flames. In the case of a vigorous fire, the treatment delays ignition for a period of time depending on the thickness and nature of the treated materials, the amount of surface coverage, the intensity of the fire and the proximity of the treated material to the actual flames. *This delay in ignition is beneficial in that it permits additional time for emptying the building of its human occupancy and provides additional time for the fire department to reach the scene of the fire.* The best results were obtained when the wood material was fully covered on all surfaces including edges with two coats of 4:1 Albi-Firepel "S."

Recommendations

On the basis of the foregoing data, the Committee of Tests recommends that Albi-Firepel "S" as made by the Albi Firepel Corporation of New York be approved under C26-191.0a for voluntary use as a flame-retarding coating for use under Sub-article 7 of Article 9, Administrative Building Code.[2] Approval also recommended for use as a flameproofing coating when used over wood as provided under C19-161.1[3] of the Administrative Code.

The committee further recommends that the material be mixed in the ratio of 4 parts Albi-Firepel "S"[4] to 1 part of water by volume at room temperature and applied by either brush or spray; precautions shall be taken to obtain full coverage of exposed surfaces. In order to provide full two-coat protection, inert color matter shall be added to the base coat. It is also recommended that such container bear a label or tag incorporating these precautions in addition to wording reading as follows: "Approved for use in New York City by the Board of Standards and Appeals under Cal.40-43-SM. CAUTION: Do not use in work not protected from the elements."

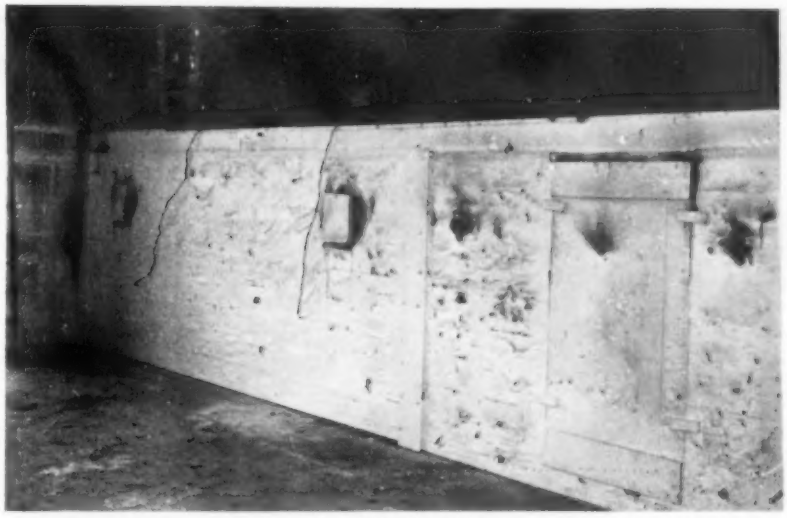
The report was signed by Bernard A. Savage, Commissioner, Charles M. Blum, Commissioner, John E. Gunn, Deputy Chief, Fire Department, Leslie V. Huner, Chief Engineer, Committee on Tests.

[2] Sub-article 7 of Article 9 of the New York City Building Code specifies the requirements for wood construction and for frame structures of wood. Includes: height and area of wood-frame structures, construction details, shingle roofing, sheds, outhouses, temporary frame structures, amusement devices, greenhouses, lumber sheds, trimming around flues, and fireplaces.

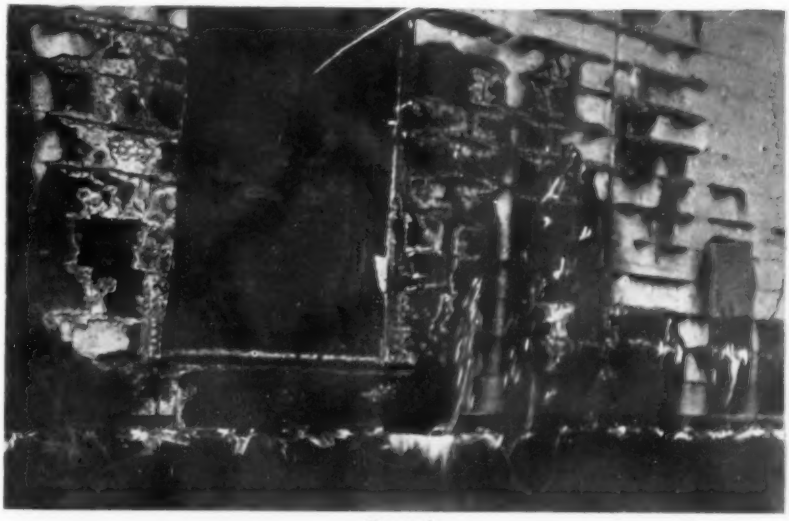
[3] It shall be unlawful for any person to use any scenery which is made of combustible material, unless painted or saturated with a

(*Footnotes continued page 77*)

After Forty-One Minutes



Specially Treated



Treated

Untreated

"Homes Fit for Heroes"?

Are we backing up our "Commando Kellys" if we continue to tolerate such housing and neighborhoods as this?

TECHNICAL Sergeant Charles E. Kelly, the first enlisted soldier in this war to receive the Congressional Medal of Honor has come home from Italy for a visit under the Army's rotation policy. Sergeant Kelly, nick-named "Commando" Kelly by his comrades after his herioc exploits in his "one man blitzkrieg," lives in Pittsburgh.

With the announcement early in April of his approaching return, newspapers carried the picture of Sergeant Kelly's mother telling neighbors, in front of her Pittsburgh house, the good news. On April 11, the *New York Times* put concretely in an editorial—see clipping—the thoughts that must have come to many who read the news item and looked at the picture. As this editorial indicates, America is waking up to the paradox and implication of our widespread poor housing conditions in a land of power and plenty.

Winston Churchill and Bishop Hudson

The housing problem has been frankly faced in England. The zeal with which this is being attacked there is indicated by Prime Minister Winston Churchill's radio address on March 27 from which these arresting passages are quoted:

"We set before ourselves the provision of homes for all who need them, with priority for service men, as and when they come home from the war.

"Now I do not take the view myself that we were a nation of slum dwellers before the war. Nearly 5,000,000 new approved houses or dwellings were built out of about 11,000,000 in this small island between the two wars and the British people as a whole were better housed than almost any people on the Continent of Europe, or, I will add, in many parts of the United States of America. But now about 1,000,000 homes have been destroyed or grievously damaged by the fire of the enemy. This offers a magnificent opportunity for rebuilding and replanning, and while we are at it we had better make a clean sweep of all those areas of which our civilization should be ashamed. . . .

"We have already declared in 1941 that all land needed for public purposes shall be taken at prices based on the standards of values of March 31, 1939. . . . Whereas stocks and shares and many classes of real property have gone up in value during the war . . . the state has the power, which it will on no account surrender, to claim all land needed bona fide for war industry or for public purposes at values fixed before wartime conditions supervened. . . . Nobody needs be deterred from planning for the future by the fear that they may not be able to obtain the necessary land. Legislation to enable the local authorities to secure any land required for the reconstruction of our towns has been promised and will be presented to Parliament this session.

"We need not be frightened about the scale of this task. It looks to me a small one—this housing—compared to some of those we have handled and are handling now."

Bishop Noel Baring Hudson, of England, has put it this way:

"We look upon the bomb-struck ruins of our London slums and view them as hell-sent opportunities for a more glorious city of tomorrow."

On the steps of her home in Pittsburgh, Mrs. Irene Kelly, mother of "Commando" Kelly, tells neighbors that her son is coming home from Italy where he was recently decorated for bravery. *Photo: Press Association, Inc.*

The New York Times

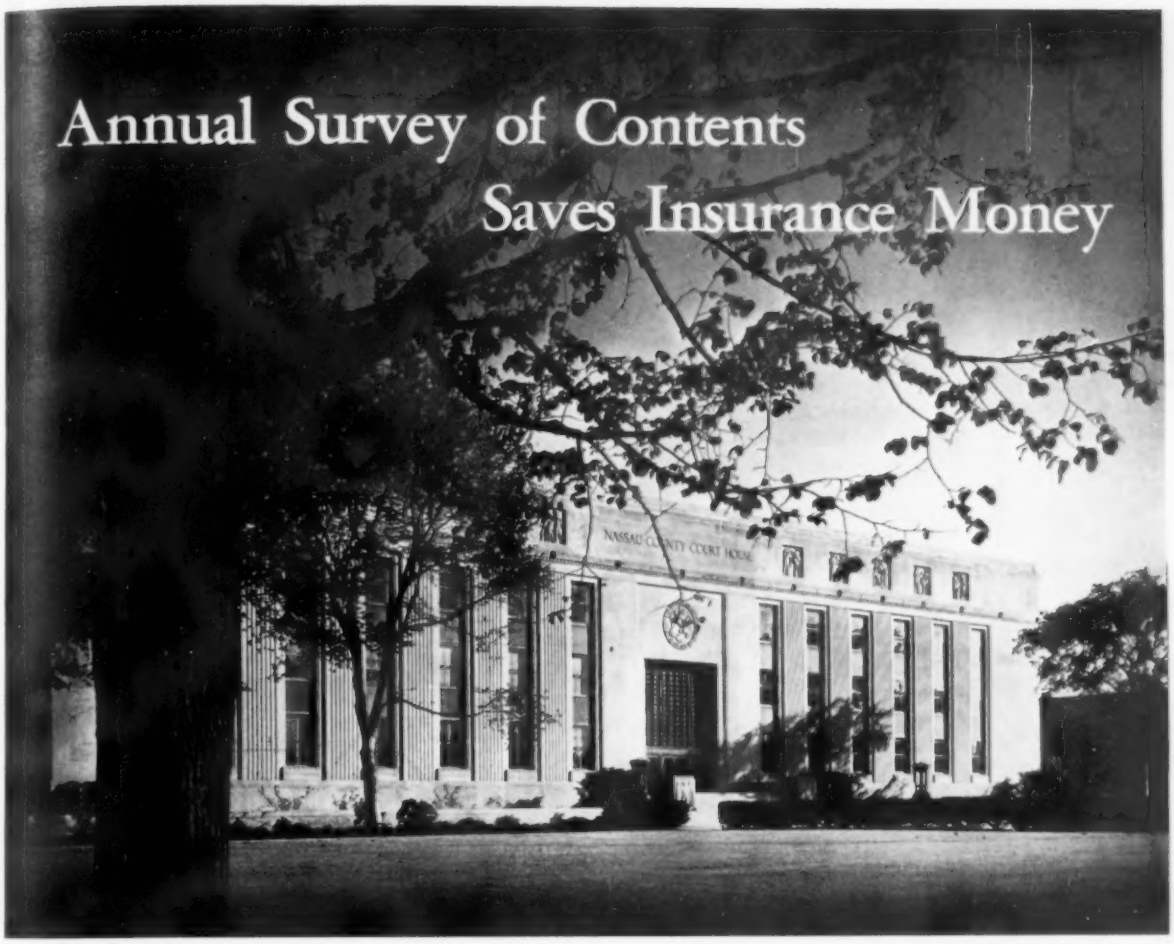
TUESDAY, APRIL 11, 1944.

MRS. KELLY'S DOORSTEP

Mrs. Irene Kelly of Pittsburgh got news the other day that her son, Sgt. Charles Edward Kelly, first winner of the Congressional Medal of Honor in the Italian theatre of war, is coming home soon. A photograph published in this newspaper showed Mrs. Kelly on her doorstep passing the news along to some of her neighbors. They were neighbors with good American faces, and one could guess that their homes, and Mrs. Kelly's home, were spick and span inside. But Mrs. Kelly's doorstep abutted on an alley that was certainly not more than ten feet wide, and into which the sun could certainly not penetrate very long in any day. The surrounding walls were of unpainted clapboards or dingy brick.

This housing produced Sergeant Kelly, who must be healthy as well as brave. It produced six other Kelly boys, all now in service. But will anyone dare say that it is good enough for the Kellys? Certainly there is a field right there, in that angle of Pittsburgh, for some housing—subsidized by the Federal, State or city government, if necessary—that will provide Mrs. Kelly with a better doorstep, more sunlight and something better to look at than a gray wall ten feet away.

Annual Survey of Contents Saves Insurance Money



NASSAU is one of the younger of the 3,062 counties of America. When Greater New York was born in 1898, the towns of Hempstead, North Hempstead, Oyster Bay remained outside the metropolis and became Nassau County. Its total population then was 30,000; now it is over 450,000 and growing.

A significant governmental event was its reorganization on January 1, 1938 under a new charter which delegated broad administrative power to the County Executive, making the Board of Supervisors a legislative body. The very real achievements in County operation have been made possible by our flexible charter which permits things to be done promptly in accordance with the need and time. The charter consolidated certain services taken over from the two cities, three towns, and 63 villages, such as assessing, health, welfare, county district court system, and possibly provides a framework to permit such improvements as a county sewerage system of trunk sewers and treatment plants with the laterals owned locally.

Insurance Control

Bringing all county buildings under one department, the Department of Public Works, furnished the opportunity to handle the fire insurance with the same efficiency as our other building operations. The Superintendent of Buildings has the entire program before him and can make comparisons, one building with another, and keep track of the schedule.

After the reorganization in 1938, insurance engineers made an appraisal and recommendations. County engineers made an independent survey. The two appraisals were mutually discussed and an agreement reached on values. The insurance is written for a term of five years and so arranged that one-fifth of the premium is payable each year. The total insurance amounts to $4,237,165. This commonsense method, increasingly used by municipalities, saves the taxpayers 20 percent of the premium on a one-year basis. Prior to this master policy, each department head arranged for the insurance on equipment and buildings owned or occupied by his department. As a result there was a large number of separate insurance policies at varying rates. Some coverage was too high and some was much too low. The new master plan incorporating all insurance in one policy gave uniformity to our whole insurance program. Adequate coverage at reasonable rates was effected at very considerable savings in amounts spent for insurance premiums. Furthermore, the annual check on the valuations of buildings and equipment has brought to light new methods of reducing risks which in turn have reduced costs.

Annual Appraisal of Contents

Every department submits an inventory of its equipment when submitting its annual budget. Equipment not on the department inventory such as blinds, shades, and lighting-fixtures, is on the Building Department inven-

tory. The Superintendent of Buildings has access to all these inventories, and each year computes the value of the current contents of each building.

Close attention is given to depreciation, which must be considered in estimating the value of contents. These items constitute 10 to 20 percent of insurance, and in case of fire in fireproof buildings are likely to be the principal element of loss as well. It is in the interest of the taxpayers and the government to appraise and reappraise their replaceable values.

The principal properties owned by Nassau County are the county courthouse, courthouse annex, jail, warden's dwelling and garages; new county courthouse erected in 1939 consisting of three buildings; Meadowbrook Hospital, a general hospital of 250 beds, and Farmingdale Sanitarium (tuberculosis hospital) of 400 beds, both institutions being complete with deep-well systems, sewage-treatment plants and heating systems; county home, police headquarters and garage.

A Big City of the Future

Nassau County requirements are unpredictable, because the rosiest expectations of population have been consistently exceeded. Population increased straight through the depression, from 303,000 in 1930 to 406,000 in 1940, and to over 450,000 today.

The war has directed thought to industries. These include Republic Aviation Corp., Gruman Aircraft Engineering Corp., Ranger Aircraft Engine Division of Fairchild Engine and Airplane Corp., and Sperry Gyroscope Co., Inc. In the long run, after the war, industries will do much for Nassau County; but the type of people in the County may do as much for the industries—which have been manned and womaned without cessation. Look at their records.

Sudden new requirements of as many as 500 families at a time have had to be met by street-lighted highways and other services. That the county has done the job as it developed, is due to the charter which concentrates essential services in a flexible county framework. This charter amounts to business procedure. Our communities, coming closer to each other and interdependent, act as a large city.

PHOTOGRAPH COURTESY AMERICAN-LA FRANCE-FOAMITE CORP.

Let's Summarize Fire Protection

By GEORGE W. BOOTH
Chief Engineer
National Board of Fire Underwriters Prevention

FOR fire, you must have combustible material, a supply of oxygen, and heat. Combinations and variations of these make the difference between a quick-flash fire, such as that of oil, or a slow smudge, or a long-burning conflagration. Man's control of fires will depend first, upon his ability to foretell the result which may be had from possible combinations. This is fire prevention. The second of man's control of fire is in changing the combinations of combustible material with oxygen and heat. This is fire-fighting.

In the days of Benjamin Franklin, about the only available means of putting out a fire was by water from a bucket, and its use was early recognized in the fire-insurance rates, if the person insured would guarantee to keep a certain number filled and conveniently located.

As values increased and hazards became greater, the water pail's ineffectiveness became more apparent. In industry, the principal of applying water or other extinguishing agents quickly to a fire has gone far beyond first-aid fire appliances. Arrangements have been made for permanent installations of piping, outlets, source of supply, and operating machinery to apply these agents automatically within a few minutes of the start of the fire. These devices are: First, automatic sprinklers, which produce a rain of water, usually wetting down the ceiling and the material within a radius of ten feet of each head. Most insurance companies maintain a special sprinkler-risk underwriting department.

The second form of automatic extinguishing device makes use of carbon dioxide to dilute the oxygen content, and thus produce extincting. This has been used chiefly to protect individual machines, appliances, or rooms. Its used is the exclusion of oxgen. This fancy.

The third form of extinguishment used is the exclusion of oxygen. This is of particular value in connection with oils, fats, greases, and alcohols. The application of water on such materials is not always successful, and in some cases may do more harm than good. This exclusion of oxygen takes the form of automatically or manually applying a cover which prevents air from freely flowing to the burning material. In some instances this consists of spreading a layer of material over the burning surface. One of the early devices was to float sawdust, mixed usually with soda. Another, used extensively in the petroleum industry, is to cover the surface with a mass of foam, or soap bubbles, produced in such a way as to be long-lasting.

Alarm Systems

A growing form of signaling system is one known as an automatic alarm. Through its use a fire discovers itself at an early stage and transmits an

alarm. It works with either the fixed temperature or the rate of rise thermostat, or with one which operates on both principles, and these transmit the signal over electrical circuits.

The economic conditions brought about by wage and hour legislation are fast replacing the watchman with these automatic devices for discovering a fire an dassuring the operation of protective equipment. Their use has not yet become sufficiently general to permit their evaluation as compared to such well-established systems as the automatic-sprinkler system. An indication of its growth is the recent development of devices to operate when a beam of invisible light is interrupted by smoke, or when a flame appears, or, in connection with burglary or sabotage, when a person goes near a fence, or safe, or other object to be protected. The best form of these protective-signaling systems is that maintained by a company making a charge for its services.

Except in a small percentage of industrial and business buildings, and in even smaller percentage of institutions, which have protective-signaling system service, the remainder of the people in cities and towns must depend upon using the commercial telephone or the municipal fire-alarm system to transmit an alarm of fire to the fire-fighting force.

The fire alarm telegraph system consists of a series of boxes or stations on street corners, each with an individual number which is transmitted by electrical impulses over a circuit when the box is pulled. This code number is then sent out to the fire houses or stations. The sending of this code signal can be done automatically or through manual retransmission. Being in readily read punches on a paper tape, or easily counted strokes on a gong, there is little danger of misunderstanding the location from which the alarm was received. The municipal fire alarm systems have certain features of construction and operation which increase their reliability over that of the telephone system. The two systems provide a very desirable duplication of service for transmitting alarms.

Fighting

America far exceeds all other countries in providing municipal fire protection. The values involved and the ability and willingness of the people at large to pay for this service are the reasons.

An outstanding factor in the increasing effectiveness of American fire departments has been the work of the National Board of Fire Underwriters, through its engineering investigations of fire-fighting facilities in cities of over 25,000 population, and the concurrent work of the engineers of the various state insurance boards and bureaus.

Regarding the different types and kinds of fire apparatus they are improving in quality, and in developments which increase their usefulness without calling for a corresponding increase in manpower.

The influence of state schools of training and a greater knowledge of the engineering of fire extinction are bearing fruit in the fire-fighting methods used. The latest development of this kind is the application of water spray, commonly spoken of as fog discharge, not only on oil fires, where it has proved very effective, but also for many types of building fires. Because of the cost, few departments have become large users of gas masks and special breathing apparatus, although their value in many kinds of fire is recognized.

The question of fire protection is only partially covered without a discussion of water supply. Water is, and always will be, the principal means of extinguishing fires. To reduce heat a medium must be used which has great absorptive power for heat units. No medium has been found as useful as water, nor one which is as cheap and plentiful.

Minor Jobs for Addressing Machines

IN ADDITION to the major addressing-machine jobs which have been described in previous issues of THE AMERICAN CITY, there are numerous smaller jobs which can be simplified at some saving in time and convenience when the equipment is available. Some of these are listed here.

Jury List

In Leominster, Mass., the names on the jury list are placed on address plates. These plates are used as a card file for office purposes with the advantage that a list can be printed in a very short time whenever required.

Election Officers

Likewise, in Leominster, the list of election officers is set up on address plates which can be used as a card file and for addressing notices and other communications. By tabbing the plates, the inspectors can be separated by parties mechanically.

Addressing Envelopes for Office Use

In some city offices, there is much outgoing mail to a relatively few addresses. For example, the welfare department sends reports and other material frequently to the State Welfare Department. Time in addressing envelopes for such mailing is saved by making plates and addressing a supply of envelopes in advance of need.

Property Descriptions for Tax Sale Advertisements and "Instrument of Taking"

To avoid any possibility of errors in copying property descriptions on "Instruments of Taking," the City Treasurer and Collector in Newburyport prepares his original list by typing stencils.

These stencils are run through the machine to print the list sent to the newspaper for publication. The stencils bearing the description of properties on which taxes are paid, prior to the sale or taking, are removed from the file. The remaining stencils are used to print the property description in the "Instruments of Taking."

Tests of Firepel "S"

(*Continued from page 73*)

non-combustible material or liquid or otherwise rendered safe against fire in accordance with the requirements of the Commissioner, in any building of a public character, including a hotel, theatre, restaurant, public hall, department store, and a building used or intended to be used for purposes of public assembly, or licensed places of public assembly, amusement or instruction, and a building where large numbers of persons congregate. The liquids, materials or compounds, as required under the provisions of this section, and their method application, shall be approved by the board of standards and appeals.

"The manufacturer in the directions which appear on the containers specifies that the material shall not be diluted in excess of 1 part water to 4 parts of Albi-Firepel "S." The reason for this is that the material is very flexible. Lesser dilutions, such as 1 part water to 6 parts of the material or 1 part of water to 9 parts of the material are just as readily applied where it is desired to increase the protection. There have even been instances where the concentrated material has been applied without dilution by means of a power spray gun. The manufacturer points out that the protection afforded by the material depends on the thickness of the film applied, and it is left to the judgment of the user to adjust the concentration of the material to his particular needs, the only warning being that the material must not be diluted more than the 4:1 ratio.

These tests were much more severe than the exposure permitted in the standard A.S.T.M. time-temperature curve furnace tests where the permitted temperature at the end of one hour is 1,700° F. on all Themocouples with only a slight deviation between thermocouples permitted. At Thermocouple No. 2 temperatures were registered in excess of 2,800° F. at the end of 11 minutes. This temperature is 500° in excess of the permitted temperature of the A.S.T.M. furnace test at the end of 8 hours. The average ignition point of wood is around 475°.

While Firepel "S" is designed as a fire retardant coating material and is manufactured only in the white, the users of the material can tint it or color it for decorative effects by the use of alkali resistant dry pigments or water-soluble dyes. The only additional treatment needed after the application of the tinted Albi-Firpel "S" is to mop down the fried surface with a zinc sulphate wash to harden and secure the surface from bleeding through.

The Human Side of City Hall

Making "Administration" Come Alive

By PHILLIPS BRADLEY

TWO letters in THE AMERICAN CITY last month (page 73) suggest the value of giving more attention to City Hall's organization and to the general administrative aspects of local government. They advocate more extensive treatment of the structural and procedural, along with the functional, features of municipal affairs. This idea has more than once been discussed on this page; it is certainly deserving of further examination — and experiment — in every City Hall in the country.

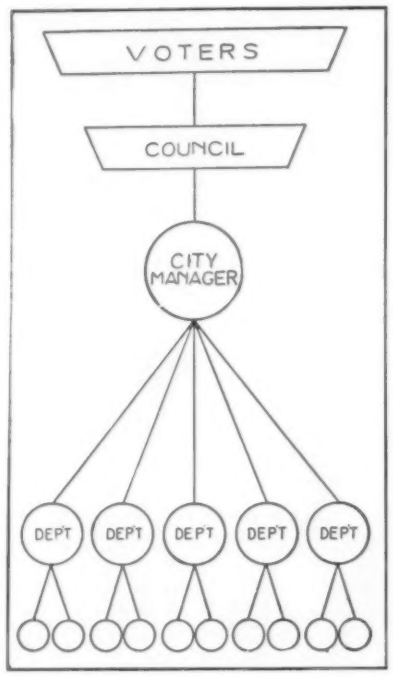
It is, of course, easier to dramatize the big public works project outdoors than the internal organization which may, in fact, be the primary factor in its planning and construction. The former is easy to see; many people use it directly or indirectly. The latter is behind the scenes; its results are not often immediate or visible. There is all the more reason, therefore, to make the citizens aware of the progress on the administrative as well as the functional front at City Hall.

Many examples of good reporting in the former area of local government have been noted in THE AMERICAN CITY from time to time. Analysis of administrative organization and procedures has not been standardized as completely as has, for instance, budgeting and accounting, school or vital statistics, or welfare programs. There are, however, a few techniques which can be usefully applied to improving public information on who does what and how at City Hall.

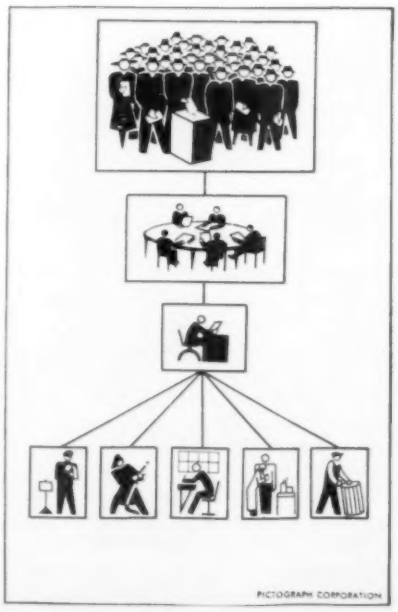
Charts as Guides and Yardsticks

The basic organization of departments, line and staff, should be available in chart form. It can be used in the annual report and made available to schools and civic groups. Combined with a directory of officials and offices, it provides a convenient guide to inquires at City Hall.

A general organization chart should be relatively simple; overall organization should be shown without, however, too much breakdown of departmental structure. Elected officials may be shown in circles; appointive, in squares. The chart should present a correct picture of administrative relationships and responsibilities. Solid lines may be used to designate the hierarchical flow of authority; broken lines, to indicate advisory or ancillary functions.



In these two charts the National Municipal League shows two methods of visualizing the organization of the Council Manager Form of Government in a small city.



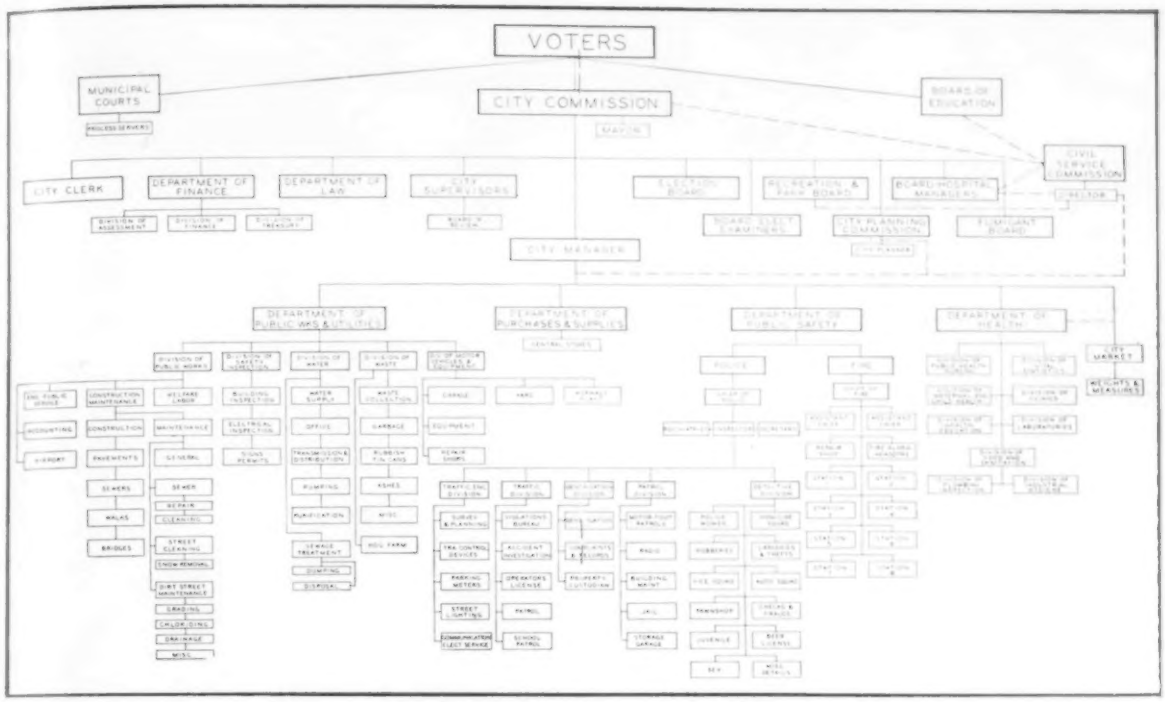
In addition to a general organization chart, each major department at City Hall should work out a similar chart of its own internal structure. Here, breakdown can be more complete; the portrayal of a single functional grouping is less complex and, from the citizen's viewpoint perhaps more important. He will often want to know where the special service or activity in which he is interested is located, what authority it has, whom to see. Again, a directory of officers and offices within the department will prove a valuable addition to the chart. If the department is equipped with a central inquiry desk or unit, its relation to the various bureaus should be clearly portrayed.

Charts and directories are only the first step in effective administrative reporting. Non-technical functional descriptions of the duties, services, and activities of line and staff departments will be widely used by those interested in City Hall's affairs. They will do much to elicit the interest latent in many groups whose contacts are infrequent or indirect. An alert mayor or manager, concerned to develop wider civic awareness of municipal programs, will find that more intelligent citizen-understanding will result from well-prepared functional accounts.

A well-organized functional record of a department need not be dull or routine. From the chart and directory on the first page or two, the story can move from the office of the chief down through the various bureaus and subordinate units and out through the varied activities and services performed. A page for each will generally be enough; a photograph or two for each unit and a cartoon drawing here and there will make the administrative story come alive.

Procedural "Flow-Charts"

Beside blueprinting City Hall's organization and personnel, citizen-understanding of administrative procedures can be stimulated by a series of flow-charts of how the work gets done. Flow charts can be used to illustrate, for instance, what happens to a tax dollar when it passes across the counter into the till. What records are kept? What checks on current accounts

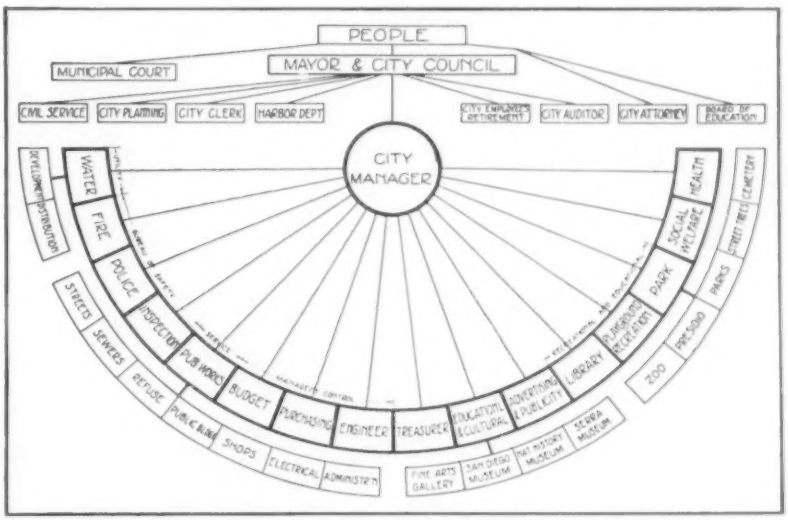


Organization chart of the City of Flint, Mich.

are made? How is allocation of funds done—and who does it? What final accounting procedures are in force?

Again, take such administrative questions as public-contract letting, assessment procedure, budget planning, public works designing. These—and many other—routine administrative procedures can be "animated" both easily and profitably. Simple charts, briefly annotated and illustrated with cartoon drawings or photographs showing the various steps involved and the variety of officials who participate, will do much to make the community more aware of City Hall's behind-the-scenes work in its behalf. They will also provide yardsticks to the many groups interested in measuring the quality of municipal efficiency as well as of pavements.

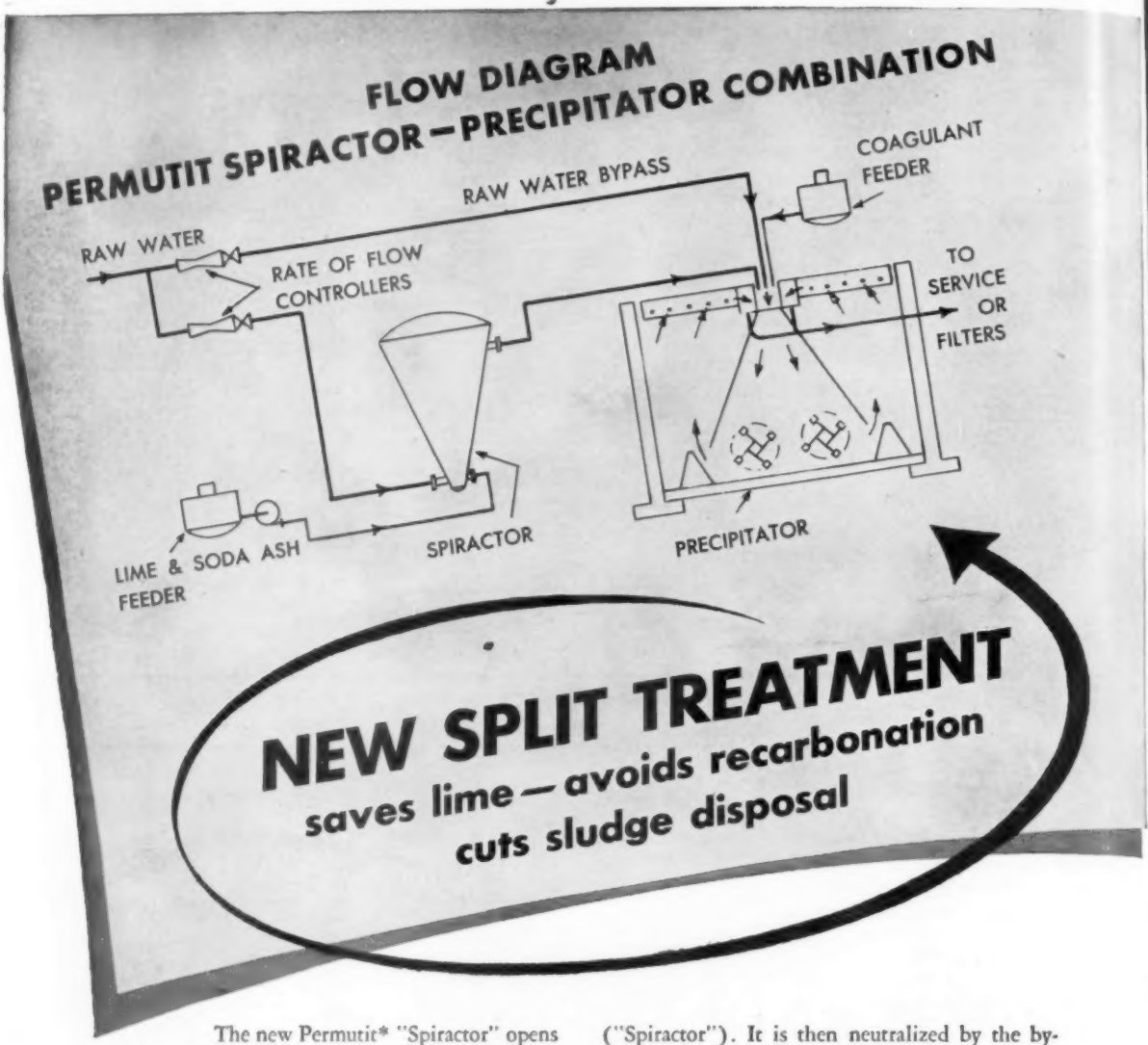
The uses to which charts and procedural recordings of this kind can be put needs no elaboration here. Every civic group will be interested. The schools can do much with them to improve both "civics" teaching and the alertness of the city's future citizens. A small investment in printing or mimeographing, coupled with an interpretive imagination, will pay useful dividends in public interest. Incidentally, the very analysis will often reveal procedural improvements which City Hall can make in its administrative structure and practices. A little self-analysis will be more effective in this respect than an outside survey—both more stimulative and less expensive!



Organization chart of the City of San Diego, Calif.

Readers of THE AMERICAN CITY are invited to send suggestions and questions for this monthly department on THE HUMAN SIDE OF CITY HALL.

Ideas which have proved effective in the public relations programs of municipal officials, and graphic methods of presenting facts are especially desired.



The new Permutit* "Spiractor" opens up interesting new possibilities in the treatment of municipal water supplies. The "Spiractor" is ideal for removal of calcium because it requires small space and low investment and because it minimizes the need for sludge disposal. Precipitates are removed by plating out on the catalyst granules, rather than as a dilute sludge.

For magnesium removal, the "Spiractor"—Precipitator combination is indicated. Utilizing the best features of both types of equipment, the calcium is removed in the "Spiractor" and the magnesium in the Precipitator. Where magnesium hardness must be reduced below 5 grains per gallon, split treatment as shown in the diagram is advisable. The major portion of the hard water is treated with all the lime and soda ash in the first stage ("Spiractor"). It is then neutralized by the bypassed raw water and coagulated in the second stage (Precipitator). This means a saving in lime and soda ash equivalent to the causticity (hydroxide alkalinity) which would normally be needed in one-stage treatment to obtain the same magnesium in the effluent.

Split treatment also eliminates recarbonation. Effluent of the second stage is stable and contains no causticity, so that water is of low enough pH value to go directly to the distribution system.

Existing lime soda plants can often be modernized advantageously by adding the "Spiractor" as a first stage. Write for full details to The Permutit Company, Dept. G3, 330 W. 42nd St., New York 18, N. Y. In Canada: Permutit Company of Canada, Ltd., Montreal. *Trademark Reg. U. S. Pat. Off.

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WATER CONDITIONING HEADQUARTERS

Making a Water Works Work

Joliet, Ill. reduces its power consumption by more than 80 percent during the past 15 years of operation while meeting an increased consumer demand for water and boosting the total available supply.

By **JOSEPH WHALEN**
Commissioner of Public Property

BACK in the relatively uneventful days of 1928, back when our chief concern was that of how to "make prosperity permanent," Joliet's Water Department ran up the formidable power consumption bill of nearly $90,000. Fifteen years later she had whittled this down to slightly less than $24,000 or a reduction of more than 80 percent. Total operating costs, which previously had run to over $200,000 now were dropped to the thrifty figures of less than $80,000.

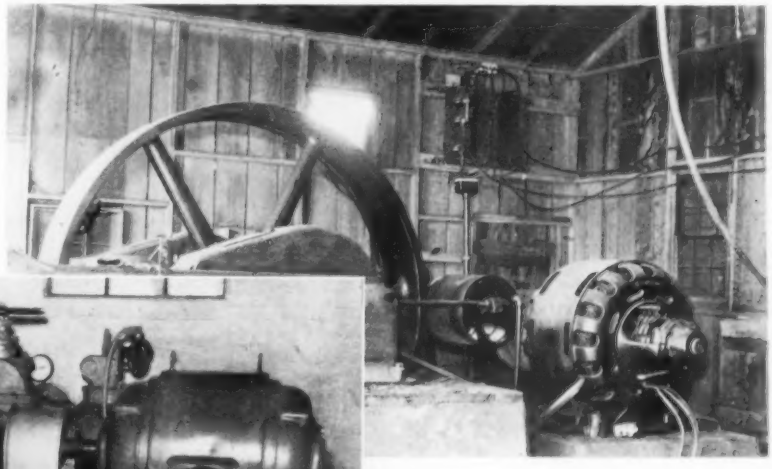
In 1928, "before rehabilitation," the department had a total of 2,535 hp available which delivered slightly more than 4½ mgd. Both east and west sides were served indirectly from pumps located at the east edge of town, the pressure varying from 18 pounds per square inch on the east side to 75 pounds on the west side. This pressure was only intermittent, being reduced between the hours of 1 to 6 a.m. to 10 pounds on the east side and 45 pounds on the west side. The supply consisted of 14 deep wells and 20 shallow wells, substantially all of which were pumped by air.

Known Leaks Repaired

The first step in putting the department on an efficient basis occurred in 1931 when officials were able to cut power costs to around $46,000 by the simple expedient of repairing known leaks and making other obviously apparent repairs. Later in 1935, they decided to put this on a more efficient basis by instituting a $100,000 rehabilitation program financed on a revenue bond basis.

At the master pumping station located at the east end of town they removed the old air-lift pumps and compressors and replaced them with two new Peerless pumps, drilling one new well in the process. Sparling master-flow meters were installed to record the pumpage. At four other pumping stations, old equipment was abandoned and new pumps were installed. At the Ottawa Street station a new Cook deep well pump was installed, supplementing its work with a new Economy booster pump. At the Williamson Avenue station, a new Economy booster pump was installed. At the Jasper Street station, new bowls were added to the existing Peerless pump and an additional 100 feet of pump column was added to the Layne Bowler deep-well pump setting. At the Campbell Street booster station a new million gallon reinforced concrete reservoir was constructed which floats on the east side system. New booster pumps also were installed. Automatic controls and master meters were incorporated into all these improvements.

All these things helped gradually to bring the pumping costs down by easy stages to around $36,000. Moreover, they increased the pressure in the distribution system and gave us for the first time an accurate figure on the



These two before and after pictures show developments in the Joliet water supply in recent years. Both are pictures of the Ruby Street pumping station.

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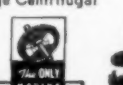
NSA Aurora Centrifugal Sump Pump

Aurora Deep Well Turbines for all conditions—4" to 24"

Type AD Hor. Split Case, Two Stage Centrifugal

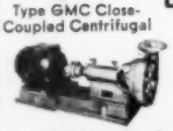
Type OD Hor. Split Case Double Suction Single Stage Centrifugal



APCO Horizontal Condensation Return Unit

Type GMC Close-Coupled Centrifugal

APCO TURBINE-TYPE PUMPS—the simplest of all pumps. Ideal for small capacity, high head duties. Silent, compact and lasting.



Type GGU Side Suction Single Stage Centrifugal

APCO Single Stage Turbine-Type

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DISTRIBUTORS IN PRINCIPAL CITIES

AURORA Always PUMPS

AURORA PUMP COMPANY

66 Loucks Street, AURORA, ILLINOIS

amount of water pumped as against that used by the customers. Another factor in the lowered power costs was certain differentials in power rates. A number of these stations enjoy a 6-mill per kwhr power rate, therefore we used them as much as possible and held the others in reserve.

Water Waste Study

Subsequently, in 1938 the department employed The Pitometer Company to conduct a water waste survey which was exceptionally fruitful. A saving of 1,800,000 gallons per day resulted from this work as well as many helpful suggestions on valve maintenance and operation. The street water main map was corrected and brought up-to-date; a card index was installed showing the location, rotation and condition of all water main valves; 75 such vales were repaired or replaced.

Two years later the department again engaged The Pitometer Company, this time to make a study of the distribution system. An important part of this later survey was the determination of the Hazen Williams co-efficient in principal mains. Nine tests showed co-efficients ranging from 77 to 120. As a result of these findings the department retained the National Water Main Cleaning Company to clean several miles of the mains thereby stepping up pressures in the affected vicinities and reducing pumping costs.

In order to keep the rehabilitated system in top-flight condition, the department has inaugurated a regular system of water leak detection utilizing a Globe Geophone for the work. All metermen and repairmen are trained to look for and listen for leaks. All bills and meter records are examined for unusual pumping characteristics, and anything out of the ordinary is immediately traced down and thoroughly investigated.

Results Significant

Specific results of the rehabilitation program and continued efficient maintenance, has in addition to the lowered power costs, resulted in a labor reduction cost of more than $8,500 per year, a reduction of 55 percent in lubricants and supplies, and a reduction of 40 percent in repairs and maintenance. During this same time more than 80 miles of water main have been installed along with 650 fire hydrants. Fire insurance rates were lowered in the loop area or the fire zone and re-rating of this district has meant lower fire insurance for the entire community.

The writer has been Water Commissioner since 1935. Prior to that time his father held the position from 1931 until his death in 1934.

Wilmington, N. C., Service Center

Wilmington, N. C. was one of the first of the cities to furnish facilities for servicemen that have now developed into the well-known USO centers. On May 30 of this year the one shown above will have celebrated its second year of service. It was dedicated in May 1941 as the Woodrow Wilson hut.

To round out this facility for servicemen this city recently completed an officer's club using its historic Lord Cornwallis home shown below.

OWU Loses Krug to Navy

DIRECTOR of the Office of War Utilities J. A. Krug recently became Lieutenant Commander in the U. S. Navy, and April 24 started his indoctrination period at Norfolk, Va. He will complete his training for a damage control officer at the Philadelphia Navy Yard.

An interesting sidelight to this announcement was the fact that previously Krug, 36 and a father of two, performing with distinction a vital government post asked his superior, Donald M. Nelson, to make no application for deferment on occupational grounds.

The office of WPB announced on April 18 that Deputy Director Edward Falk would succeed Krug as Director of OWU.

Krug, a graduate of the University of Wisconsin, was at one time associated with TVA Chairman David E. Lilienthal on the Wisconsin Public Service Commission, and came to WPB from TVA where he had been manager of power. His activities with OWU include power, gas, water and communications and he is chairman of the important Requirements Committee of WPB. He organized the war power organization which finally became OWU. Of all the war agencies in Washington today, this is considered one of the most efficiently operated units of the government.

AUTOMATIC VOTING MACHINES GUARANTEE IMMEDIATE ELECTION RETURNS

Every vote for a candidate is automatically added to the total already cast so that at the close of the polls the total for each candidate can be transcribed at once from the Voting Machine to the official Return Sheet.

"Election officials have completed their work ten minutes after the last voter has voted."

The returns for each Election District can be consolidated quickly, making it possible for the press and radio to give to the public complete election results within an hour.

If your community is not among the 3,500 cities, towns and villages where the "Mechanical Ballot" will be utilized at the coming Presidential Election in November, why not petition your local government to consider Voting Machines as a post-war project.

Write for literature.

AUTOMATIC VOTING MACHINE CORPORATION

JAMESTOWN NEW YORK

How Newport, R. I., Met An

Emergency Water Supply Program

By HAROLD E. WATSON
Water Works Commissioner

One of the first upflow-type sludge blanket treatment units to be installed in New England is a feature of the new plant built for this important war city. Project makes for extreme flexibility of supply.

THE completion of the Lawton Valley impounding reservoir of 400 mg capacity together with a new 4 mgd concrete reservoir and filter plant marks the successful end of a battle that our city has had to wage ever since the war began to insure adequate water supply. Completed with the aid of the Federal Works Agency, it gives us a treated water capacity of 10 mgd and utilizes some rather interesting water-treating developments.

For example, the plant is, we believe, the first in New England to use the upflow, sludge blanket type Spaulding Precipitator, and the results which it achieves with the soft water characteristic of that area should be significant.

The plant also uses the so-called break-point chlorination to purify the water in spite of the fact that our operators have searched diligently for some sign of a "break-point." This super-chlorination, however, gives us a nice factor of safety when one considers that we cannot exercise the sanitation control over our drainage areas that we would like. It also has produced some interesting dechlorinating developments.

To get the proper perspective, let us go back to 1911 when the original filtration plant was built. Since Newport lies on an island we have had to utilize all the drainage area available. The original designers wisely built the water supply around six impounding reservoirs; two at elevation 10 adjacent to the filter plant, two at elevations 11 and 17 located some distance away, and two at elevations 163 and 180 at the central portion of the island.

These two high level reservoirs were not connected directly to the filter plant by a pipeline. They utilized, instead, a small stream bed sending the water down with a regulated flow that the filter plant could handle easily.

Standpipe Reservoir

In the distribution system we had no elevated tanks as such, but utilized a ground storage reservoir located on a hill between the two low elevation impounding reservoirs. We also ran a 17-inch main out to the northern end of the city and let it overflow into one of the high level reservoirs. Thus we had in effect a long standpipe furnishing an extreme difference in elevation of about 160 feet.

As many water-works men know, the problems of furnishing service to a military establishment, such as the one at Newport, are a little harder to anticipate than those of a strictly civilian nature. We had our first taste of a water shortage in 1918. However, it was whipped by using the relatively well-known devices of changing from an unmetered to a metered distribution and conducting a Pitometer survey of the system.

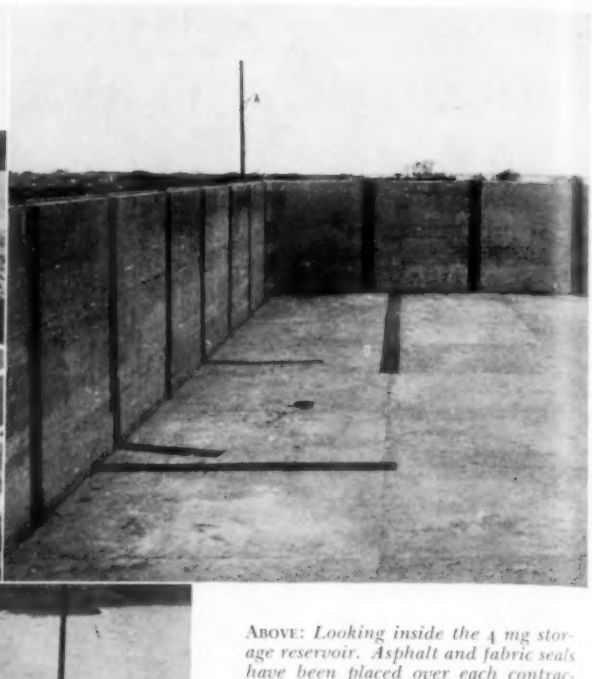
The demands of this war on our water works are, however, much greater than those of the last. The situation has been aggravated also by an unduly dry season last year. With a normal rainfall of 42 inches per year, we saw this fall away, a year ago, to only 28 inches and it was actually possible to plot a graph and see ourselves running out of water if the supply were not increased.

The improvement, constructed as a Federal Works Agency project, might be divided into two classifications. First, there were the emergency measures taken to increase the supply immediately. Next, there were the more long-range measures that boosted the available treated water supply safely over our wartime demand hump and smoothed out some of the technical aspects of the entire system.

The temporary measures included raising one of the low-level reservoirs by 5 feet thus increasing its impounding capacity 150 mg. It also covered the development of another pond on the mainland giving another 425 mg capacity. This new pond produced a certain number of complications since it was in a tidal flat and needed cleaning.

By continuously pumping and replenishing the pond from rainfall, we were able to reduce the chloride con-

The Lawton Valley filtration plant. Immediately to the left of the building are the Spaulding Precipitators and beyond them the retention basins. To the right are the filtration building and the 4-mg storage reservoir. The chemical building is shown at the extreme right. Notice the wood stairway leading to the storage reservoir.



ABOVE: *Looking inside the 4 mg storage reservoir. Asphalt and fabric seals have been placed over each contraction joint to prevent leakage.*

TOP LEFT: *Looking at the dam and spillway with the pumping station in the distance.*

LEFT: *The Spaulding Precipitator is in the foreground with the retention chambers beyond. Note the extensive use of wood and the massive concrete construction.*

LOWER LEFT: *It takes a lot of chlorine and ammonia to operate a treatment plant using super-chlorination. Here are some of the cylinders. Two Fairbanks scales weigh the chemicals as they are administered.*

BELOW: *This is a pipe gallery that most operators will admire because of its ample head-room, dry floors, and walls.*

tent from 5,000 ppm in the original pond down to only 125 ppm. When this was mixed with the raw water from other sources it resulted in a finished water thoroughly acceptable from a domestic standpoint and causing only slight complaint from boiler operators and other industrial users.

Submarine Main

In connection with the new pond, a 20-inch supply line had to be built to connect it with the existing reservoirs. The line extended under the Sakonnet River and included approximately 1,500 feet of submarine main—our first experience with this type of crossing. This particular stretch used the Metropolitan joint buried in a 6-foot trench and thus far has been performing excellently.

These emergency measures made it possible for us to meet the heavy water demands of last year, although it gave us very little margin. It also gave us time to finish the 4-mgd Lawton Valley filter plant and reservoir which gave us an interesting operating arrangement as well as an ample supply. One money-saving feature as far as operation is concerned is the construction of a 24-inch main from the new filter plant to the old, thus replacing the old 17-inch main. It is now no longer necessary to let the raw water run down hill by gravity and turn around and pump it back uphill again.

Upflow Settling Basin

The new filter plant uses superchlorination as a factor of safety as well as a device to control tastes and odors. When the water enters the plant, it receive a chlorine dosage of 12 ppm. It then is administered an allotment of alum at the rate of 1.4 grains per gallon and a varying dosage of lime to adjust the pH and then proceeds to the two Spaulding Precipitators. Although this upflow, sludge-blanket type of settling basin has been in use in certain parts of the country for some time, we believe that this is the first installation that has had to treat the characteristically soft New England water.

The water then goes to a retention basin supplying 3 hours storage at 4 mgd rated capacity. Here it is dechlorinated with ammonia and sulphur dioxide before proceeding to the filters.

Our practice has been to use the ammonia to dechlorinate the "upper half" of the residual and the sulphur dioxide to effect the remaining reduction. One part of ammonia, we find, will remove five or six parts of chlorine when the residual is heavy, but is not so effective when the residual is low. However, one part of sulphur dioxide will remove approximately one part of chlorine regardless of the concentration. Thus we find it economical to combine ammonia with sulphur dioxide for the most efficient dechlorinating operation.

To prevent a lime or scale "build up" and to inhibit rust corrosion, Calgon is now added in dosages of 2 ppm. This treatment has proved successful in preventing red water except on the very end of those lines extending great distances from the distribution system.

After the water passes through the filters it goes to the clear well outside the building and then to the 4-mg reservoir for storage and subsequent delivery to the 20-inch supply main.

Wood Construction

Characteristic of the times, of course, is the free use of mass concrete and wood in the construction. Wood sash and door, wood floors, wood hand railing are in evidence everywhere although the architectural use of these has been skillful. All settling basins, storage reservoirs, and filter beds use unreinforced gravity wall sections. Only the wash water troughs emerge from this role to use reinforcing. The Spaulding Precipitator uses a plywood underwater partition instead of the usual steel apron. The filters also are all manually controlled, thus eliminating the much deserved but hard-to-get automatic control table.

Supply Increased

The total available supply that the department can now furnish has been boosted from the old 6 mgd to 10 mgd. The Lawton Valley construction gives us the 4 mgd mentioned previously, and the new added work of raising the one impounding reservoir and developing the pond on the mainland makes the old plant able to furnish 8 mgd. This should take care of us easily through the present emergency.

The total cost of construction, including engineering and land, was $4,000,000.

The consulting engineer was Charles M. Maguire and Associates of Providence, R. I. The principal contractors were, Gilbane Building Co. of Providence, and Spearin Preston Burrows and P. T. Cox Co. of Newport.

John M. Gallagher, Regional Director, J. A. McConnell, Assistant Regional Director and Fred Mulcahy, Project Engineer, represented the Federal Works Agency on this project.

National Health Honor Roll

THE 1943 National Health Honor Roll awards were made recently to 53 cities and county units by Eric A. Johnston, President of the United States Chamber of Commerce, which with the American Public Health Association sponsors this nation-wide merit award program for the advancement of community health.

Awards were made by a committee of leading national authorities whose decisions were based on attainments of high standards of excellence in protecting public health in wartime. Emphasis was placed on specific measures to control communicable diseases such as venereal diseases, tuberculosis and children's diseases. Of primary importance in making the awards were sanitation, including the protection of food supplies; the proper safeguarding of child health and welfare; providing adequate maternity care; effective health education and other health services.

The following cities and counties were presented with engraved plaques: *Arkansas*, Little Rock; *California*, Los Angeles County, Pasadena, San José; Santa Barbara County; *Connecticut*, Greenwich, Hartford, Stamford; *Georgia*, Glynn County; *Illinois*, Evanston, La Salle-Peru-Oglesby County, Peoria; *Kentucky*, Fayette County, Louisville-Jefferson County, Madison County, *Maryland*, Baltimore; *Massachusetts*, Newton; *Michigan*, Allegan County, Barry County, Calhoun County, Detroit, Dickinson County, Eaton County Ingham County, Jackson, Mason County, Menominee County, Midland County, Saginaw County, Van Buren County; *Minnesota*, Rochester; *Mississippi*, Coahoma County, Jones County, Lauderdale County, Leflore County, Washington County; *New Jersey*, Hackensack, Newark; *New York*, Schenectady; *North Carolina*, Forsyth County, *Oregon*, Jackson County; *Pennsylvania*, Reading; *South Carolina*, Spartanburg County; *Tennessee*, Davidson County, Gibson County, Memphis-Shelby County; *Texas*, Austin-Travis County, El Paso City-County, Houston; *Virginia*, Arlington County; *Wisconsin*, Madison, Milwaukee, and Racine.

Knee-Deep *in* Postwar Plans?

THOUSANDS of city engineers, municipal officials, and consulting engineers are "knee-deep" in postwar plans. Many of these projects demand water conditioning equipment . . . new units to supply additional capacity or to replace those which are gradually becoming obsolete, and even complete new systems for clarification, filtration, or softening water supplies.

Fortunately, priorities place no restrictions on study and analysis . . . engineering and designing . . . blueprints and estimates. These important "musts" can be acted upon—decisions can be made—NOW! And this pre-peace action is vitally important. It can mean the difference between quick service and months of delay in the completion of the project you wish to carry through immediately after the war.

Graver engineers—specialists in the design and manufacture of water conditioning equipment—are immediately available to assist you in preliminary planning. They are ready to study your problem, recommend the necessary equipment, and submit complete designs and cost estimates.

Let's be realistic—*you* want your project completed—*we* want to help. We're ready to go the limit in rendering all possible assistance—and without obligation on your part. *Can we get together?*

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WATER CONDITIONING EQUIPMENT

Process Equipment Division
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Graver designs, builds, and installs all types of water conditioning equipment including: Hot Process Water Softeners—Zeolite Water Softeners—Water Filters—Iron Removal Filters—Taste and Odor Removal Filters—Reactivators—Swimming Pool Equipment.

Cities Report Post-War Projects—XIII

This is the thirteenth installment of brief reports from municipalities of over 10,000 population throughout the United States which have begun to plan for post-war public works or other improvements to be undertaken when materials and manpower become available. Previous replies (506 in number) to The American City's questionnaire on this subject have appeared in the issues of November and December, 1942, January, February, April, May, July, August, and September, 1943, and February, March and April, 1944.

Question No. 1 asking if such planning was under way locally, brought almost no negative replies. The other four questions were:

2. *If so, what are the principal types of projects contemplated in these plans?*

3. *By what departments of the municipal government are such plans being made?*

4. *Does your municipality have a planning commission? If so, what responsibilities and powers does that agency have as to post-war planning?*

5. *Is your municipality setting aside any reserves, in war bonds or otherwise, for post-war public works?*

Answers to these four questions, from 35 municipalities not previously reporting, appear on this and the following page.

Amarillo, Texas

JOE A. JENKINS, Mayor:

2. Water system improvement consisting of reservoir, two overhead storage tanks, distribution system extended; airport development; sewerage extensions; street improvement; city hall. All planned over a ten-year period
3. Freese & Nichols, Engineers, Capps Bldg., Ft. Worth, Texas
4. No
5. Yes

Arnold, Pa.

M. F. HORNE, Mayor:

2. Additional street paving and improvements; sewer system
3. Street Department
4. No
5. No

Berwick, Pa.

JOHN W. NAUS, Burgess:

2. Comfort station; park and playground; garbage disposal plant
3. "Post-War Committee" of Borough Council
4. No
5. Yes

Bristol, R. I.

J. FLOYD HUESTIS, President of the Town Council:

2. The Committee has just recently been organized, therefore nothing definite has been planned.
3. Post-War Projects Committee
4. Yes. They are included in the Post-War Projects Committee.
5. Yes, by appropriation at Town Meeting ($12,000 appropriation in March 1944)

Bristol, Tenn.

FRED V. VANCE, Mayor:

2. Extension of sewerage system; sewerage disposal plant; incinerator; extension of water mains
3. By entire governing body
4. Yes. They recommend, but the final decision rests with the Board of Mayor and Commissioners.
5. No

Burlington, Vt.

JOHN J. BURNS, Mayor:

2. Sewers; airport; water; roads; waterfront; parks
3. All Departments
4. Yes. Recommends to City Council after which things are turned over to the City Engineer
5. Some

Carnegie, Pa.

A. B. LAFFERTY, Mayor:

2. Sanitary sewers
3. Street Department
4. Organizing a Commission now
5. No

Casper, Wyo.

BEN BHUMMIS, City Engineer:

2. Resurfacing streets; extending storm sewers
3. City Engineer, Mayor, Council
4. Yes. Advisory
5. No. Our first problem in post-war planning is one of finance and until we at least know where the finances are coming from we will probably do very little in the matter of actual plans. We are doing lots of sound thinking in the matter and some scheme will eventually come from it.

Cincinnati, Ohio

H. H. KRANZ, City Engineer:

2. Construction of streets, sewers, bridges, viaducts, grade crossing eliminations; flood prevention; topographic surveys and mapping; sewage disposal
3. Engineering Division and Department of Public Works
4. Yes. Preparation of post-war plans and acts as an advisory body to the Council
5. The Council has provided some funds for post-war public works

Cudahy, Wis.

VINCENT TOTKA, Mayor:

2. Paving of streets; storm sewers
3. Engineering Department, Common Council
4. Yes. Recommends to the Common Council
5. Yes

Du Bois, Pa.

W. L. HOOVER, Mayor:

2. Street paving; sewers; water lines; recreation
3. Under the direction of the City Council
4. No
5. Yes

Elwood City, Pa.

LOWELL W. MONROE, Borough Manager:

2. Community building; garage; fire station house; additions to sewage treatment plant and sewerage system; additional storm water sewers; street improvement; incinerator
3. Engineering Department
4. No
5. No

Fairmont, West Va.

FRED T. WILSON, Mayor:

2. Land purchased and now being cleared for airport. One park for colored people and one for white people with all necessary recreation facilities; new thoroughfares through city with main routes by-passing city to relieve traffic congestion; construction of at least one bridge; city auditorium; enforcement of housing-demolish ordinance of buildings unsafe for human occupation; beautify river bank; water-works improvement; increase sewerage system
3. Department of Law and Public Welfare, Department of Water, Department of Streets
4. Yes. Their authority is very limited. They suggest plans and make recommendations to Board of Directors of the City of Fairmont.
5. No. Our state law prohibits municipalities from contracting or preserving funds beyond the fiscal year.

Farrell, Pa.

LEWIS LEVINE, Mayor:

2. Public market; recreation center; library building
3. ———
4. Yes
5. Yes

Findlay, Ohio

C. H. DUTTWEILER, Mayor:

2. Four bridges; three sewer extensions; sidewalks; extension of two streets and roads to provide two by-passes; a widening of streets; paving drainage projects; cemetery rest-rooms; additions to city building and sewage treatment plant; other projects in prospect
3. City Engineer
4. Yes. Planning only, decision rests with City Council
5. Yes

Greenville, N. C.

J. O. DUVAL, City Clerk:

2. Drainage; street paving
3. Planning Committee and Engineer. Planning Committee consists of Mayor B. B. Sugg, J. A. Watson, J. A. Collins, A. E. Hobgood, and City Engineer, Henry L. Rivers
4. Yes. Makes recommendations to the Board of Aldermen
5. Small cash reserve

Greenville, Texas

R. B. RUSH, City Manager:

2. Water tower; enlarge sewer plant; extend water mains; extend sewer mains; water filter; street system; water reservoir; parking lots; parks; storm sewers; fire alarm system; schools
3. City Engineer
4. Yes. Recommends to City Council but City Council is not legally bound to the Planning Board recommendations.
5. Yes, in bonds and otherwise

This is the Littleford 84-HD Kettle with Hand Spray Attachment. Models include the 84-HD Kettle with Motor Spray Attachment, the "One-Man Kettle", or the 84-HD without Spraying Attachments.

84-HD
ROAD MAINTENANCE
KETTLE

For Post War Highway, Road, Street, and Airport Runway Repairs, the 84-HD Kettle has proven through actual service to be the most efficient operating Kettle of its kind.

With a Hand Spray Attachment, the 84-HD Kettle becomes a two-man unit, one to turn the pump and the other to control the spray. The Continuous Heat Circulating Heat System and the Screened Reservoir make the 84-HD a low cost, fast heating, fast producing sprayer.

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BLACK TOP ROAD MAINTENANCE EQUIPMENT
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Littleford Bros., Inc.
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Homestead, Pa.

HARRY C. LEWIS, Secretary:

2. Sewer-street construction
3. Street Department
4. No. Borough Council
5. Yes

Hickory, N. C.

R. F. SMYRE, City Manager:

2. Double the capacity of our filtering plant; build two disposal plants for handling sewage, including industrial waste and dyes; construct a water supply line from pumping station into the city, a distance of about four miles probably a 24-inch main; build an incinerator and additional line to our water and sewer distribution system
3. Service Department. We will probably employ a consulting engineer.
4. Yes. They are authorized to make plans and recommendations to the City Council.
5. A small amount. Most of the post-war work will have to be done from the sale of Municipal Bonds.

Huntington, Ind.

ROY HOWELL, Mayor:

2. Street rebuilding
3. Street Department
4. No
5. No

Kenosha, Wis.

JAMES G. WALLACE, City Manager:

2. Highways; sewers; sidewalks; finish present parks; arterial ways, both surface and depressed
3. City Engineer, City Manager, Park Department
4. Yes. A large community Post-War Planning Commission has been formed to aid publicity.

Lebanon, Pa.

GEORGE H. BIELY, City Clerk:

2. Additional water supply; storm sewers
3. Department of Parks and Public Property
4. Yes. To cooperate in formulating plans through suggestions
5. Yes

Madison, Wis.

F. HALSEY KRAEGE, Mayor:

2. City Hall; municipal auditorium; Youth Center recreational facilities; extensive street improvement program; several grade crossing projects
3. Special Post-War Planning Committee appointed by the Mayor in 1942 and by the City Plan Commission, which studies and makes recommendations pertaining to such matters to the City Council.
4. Yes. It studies and approves a master plan for the development of our city and files with the Common Council its recommendations pertaining to specific projects.
5. Yes, presently amounting to approximately $480,000

Mount Vernon, N. Y.

AUGUST STOLTZ, Commissioner of Public Works:

2. Fire stations; rehabilitate incinerator; water supply lines; many sanitary sewer enlargements and additions; new storm drains; new paving and repaving of streets; new playgrounds; city-wide sidewalk repair project; addition to City Hall building; totaling $3,000,000 estimated cost.
3. Engineering Bureau of the Department of Public Works; Private Architects on building construction
4. Yes. None
5. No

Newburgh, N. Y.

JOSEPH A. FOGARTY, City Manager:

2. Sewage disposal plant, tunneling South St. through Downing Park; rehabilitating roads and walks and repaving of streets; extension of water lines; fire alarm system
3. Under control of the City Manager
4. ———
5. We have just established a Reserve Fund for indebtedness.

MIDDLETOWN—Testing Ground for Connecticut Postwar Planning
CONNECTICUT PUBLIC EXPENDITURE COUNCIL, INC.
21 LEWIS STREET .... HARTFORD, 3

Cover of a 32-page pamphlet in which the Connecticut Public Expenditures Council outlines how Middletown, Conn., is determined to win local peacetime prosperity through local efforts, without first running to the Federal Government for help and handouts.

Oil City, Pa.

B. B. WEBER, City Engineer:

2. Improving dirt streets, $250,000; intercepting sewers and sewage treatment works, $500,000; small street widening project, $8,000; new water mains and other water works improvements, $50,000; above are now being "blueprinted." Also preliminary studies are being made of a $500,000 project for relieving traffic congestion by-passing business section, etc.
3. City Engineering Department. Plans for sewage treatment works being made by consultants, Morris Knowles, Inc.
4. Yes. Advisory only
5. Not specifically, although funds on hand have increased considerably in the last few years, and bonded indebtedness has been reduced by nearly $400,000 in the last 12 years.

Ontario, Calif.

TAYLOR M. PETERSON, Mayor:

2. Enlargement of sewage disposal plant; administration building; hangars for municipal airport; reservoir roof replacements; water system improvements; street paving program
3. City Engineer
4. Advisory
5. Yes

Parma, Ohio

ALBERT L. SCHUSTER, Service Director

2. Resurfacing 18 miles of streets; new fire station; developing a new public park
3. Service Department and Parks Committee
4. Yes. Advisory to the City Council
5. Yes

Plainfield, N. J.

ROSS R. DEARDORFF, Supervisor of Finances:

2. Sanitary and storm sewers; reconstruction of pavements
3. Engineering Department
4. Yes, but not active
5. Yes

Pottsville, Pa.

GEORGE H. STEIDEL, City Engineer:

2. Construct several sewers, sidewalks; open several streets; re-lay gutter stones; erect street signs; numerous other municipal projects
3. Department of Street and Public Improvements, James A. Lynaugh, Director
4. Power to consider and recommend
5. Yes

Providence, R. I.

WILLIAM A. CAHIR, Acting Mayor:

2. Highway construction and re-construction; extension of water supply system; solution of traffic problems; extension of health services; construction of war memorial; rehabilitation of veterans
3. Public Works Department, Water Supply Board, Health Department
4. Yes. Formulation of plans for municipal projects and liaison between City Council and public planning groups. All actions subject to approval of City Council
5. Presently concentrating on reduction of municipal debt.

Racine, Wis.

FRANCIS H. WANDT, Mayor:

2. Paving will be a large part of the program. Also, new sewers; improvement to garbage disposal plant; waterfront; recreation; possibly a new library building
3. Paving, sewers and garbage plant by Public Works Department, Library by Library Commission
4. Yes. It recommends only
5. Yes

Red Bank, N. J.

C. H. ENGLISH, Mayor:

2. River front park development; expansion of sewer facilities; expansion of municipally owned water facilities; expansion of municipally owned incinerator
3. Mayor and Council
4. Yes. To plan and recommend
5. Yes, both cash and war bonds

Stevens Point, Wis.

B. E. FIEVE, City Engineer:

2. Sanitary sewers; street repairs; park improvements; school building improvements; extension to water mains
3. School Board, Street Department, Water Department
4. Yes. To plan and propose necessary public work projects and prepare temporary estimates
5. No, but if necessary we have a large bonded limit to depend upon.

Yonkers, N. Y.

NORMAN P. HENDERSON, City Engineer:

2. Sanitary and storm water sewers; street paving and widening; refuse incinerator; improvements to water storage; distribution and purification facilities; renovations and improvements in existing school buildings; improvements in parks and playgrounds.
3. Department of Public Works; Bureau of Engineering; Bureau of Water Extension, Board of Education, Recreation Commission
4. Yes. Advisory
5. No

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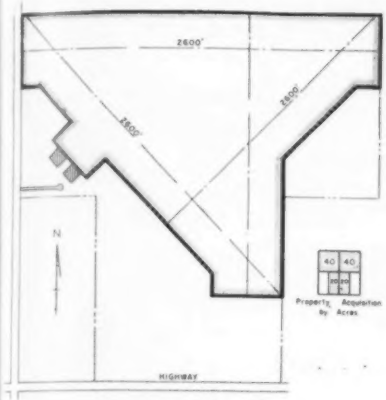
How An Airport Plans to Grow

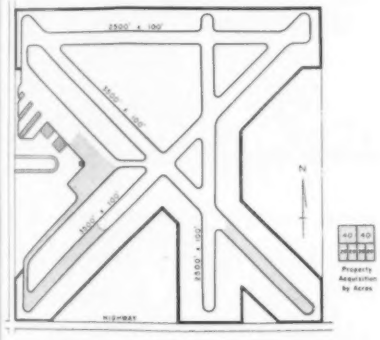
Six progressive steps in the evolution of an airpost illustrated in a booklet released by the Michigan State Board of Aeronautics represent a study for a small Michigan city.



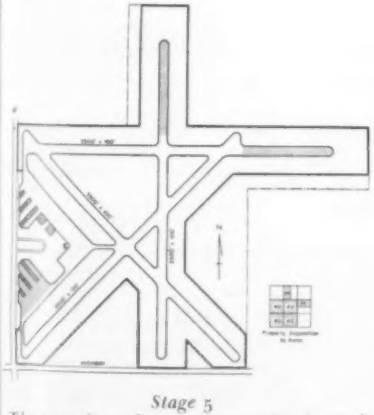
Stage 1
Site for the original development requires 120 acres. Work involves only that of conditioning landing strips to length shown and a certain amount of grading, drainage, and seeding.

Stage 2
Landing strips have been extended to the maximum and two runways are paved to Class 2 lengths as shown. A taxiway and apron also are included. Hangars may be built as needed.

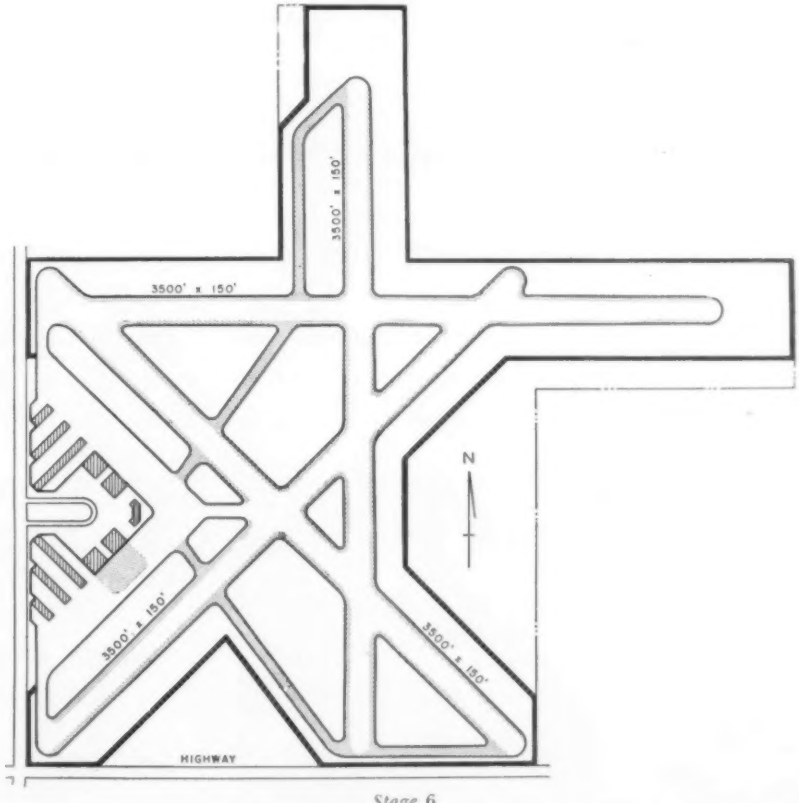
Stage 3
Two additional 2,500 foot runways have been added as well as new hangar facilities. Michigan authorities report that the unit or T-hangars are particularly well fitted to conditions in that state.



Stage 4
The two diagonal runways are now extended to class 3 standards allowing them to accommodate limited airline operation.



Stage 5
The use of another 40 acres makes it possible to extend the N-S and E-W runways to meet Class 3 specifications.



Stage 6
This is the way the airport will look in its final stage of development. Runways have been widened providing taxiways at the end, two additional hangars and the final units of the administration building have been added. It is possible that the proposed city will not need to develop the airport to these latter stages. However, a Master Plan of this type will provide for these developments should conditions arise.

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TRADE MARK REG. U. S. PAT. OFF.

**The Solvay Process Company employs salt, limestone and ammonia to make Soda Ash, from which basic materials Caustic Soda and other alkalies are derived.*

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Wartime Water Rates--IX

Of the rates for the six cities studied this month three indicate that they have been increased and two reduced over those previously in effect. One has dropped its policy of charging rates based on the value of residences and business places.

Jacksonville, Fla.

Rates:

Jacksonville has three types of service as follows:

A Class-1 Service shall be a service which supplies water to any building or establishment used for commercial or industrial purposes, to any multi-family residence or apartment house, and to any single family residence which is provided with 4 or more plumbing fixtures.

A Class-2 Service shall be a service which supplies water to a single-family residence only, which is provided with a total of 3 plumbing fixtures.

A Class-3 Service shall be a service which supplies water to a single-family residence only, which is provided with not more than 2 plumbing fixtures.

For any amount of water up to 3,500 cu. ft. consumed in 3 months, a class-1 service rate is $3.00. For any amount of water up to 2,500 cu. ft. consumed in 3 months, a class-2 service rate is $2.00. For any amount of water up to 1,800 cu. ft. consumed in 3 months, a class-3 services rate is $1.50. For water consumed over the above amounts the following rate applies:

For the first 20,000 cu. ft.	$.08 per 100 cu. ft.
For the next 50,000 " "	.05 " " " "
For all over 70,000 " "	.025 " " " "

Otuside the city limits the rates will be 50 per cent above those enumerated.

Payments are to be made 3 months in advance. There will be no annual advance billing. When the rate is paid quarterly, the account wil be closed for each quarter; but should the amount of water at any time during the period paid for exceed in value the amount paid in advance, the right is reserved to close the account before the end of the period.

General Data:

Population served—240,000
Services (100% metered)—35,984
Hydrants—1,925
Miles of mains—472
Supply—artesian wells
Treatment—chlorination and aeration
Tap water—305 ppm $CaCO_3$, pH 7.5
Average consumption—18 mgd
Total capacity—27 mgd

Consumer Costs Per Month:

(Based on Class-1 Service.)

3,000 gals.	(400 cu. ft.)	$1.00 (min.)
5,000 "	(667 " ")	1.00 "
10,000 "	(1,333 " ")	1.13

Previous rates appearing in THE AMERICAN CITY for October 1934, were based on value of residence or business place. The system is self-supporting. We estimate that $197,000 will be turned into the General Fund this year after all expenses, including sinking fund and interest, are paid.

L. D. ST. JOHN,
Acting General Superintendent,
Water Department.

Compton, Calif.

Rates:

(On bi-monthly basis.)

First	2,000	cu.	ft.	at	15½c	per	100	cu. ft.
Next	8,000	"	"	"	13c	"	"	" "
"	20,000	"	"	"	9c	"	"	" "
"	20,000	"	"	"	7c	"	"	" "
"	30,000	"	"	"	6c	"	"	" "
"	20,000	"	"	"	5c	"	"	" "
Over	100,000	"	"	"	3½c	"	"	" "

Minimum bi-monthly charge shall be according to the size of the meter as follows:

¾"	meter	$3.10
1"	"	4.20
1½"	"	4.50
2"	"	5.50
3"	"	7.50
4"	"	10.00
6"	"	13.00

A discount of 50 cents is allowed if the bill is paid by the fifteenth of the month following date of meter reading.

All consumers are required to make a deposit of $3.00 unless credit has been established by a former service with this department.

All applications for service must be made at the department's office on forms furnished by the department. The following charges are made for the installation of a service:

¾"	service	$15.00
1"	"	35.00
1½"	"	70.00
2"	"	100.00

General Data:

Population served—21,000
Services (100% metered), 5,350
Hydrants, 402
Miles of mains, 65
Supply—2,600 gpm from wells
Supply—3,400 " " Metropolitan Water District
Average consumption—2½ mgd
Total capacity—8½ mgd

Consumer Costs Per Month:

3,000 gals.	(400 cu. ft.)	$1.30
5,000 "	(667 " ")	1.50
10,000 "	(1,333 " ")	1.73

These rates represent an increase of 10 to 25 per cent over those published in THE AMERICAN CITY for February 1935. The rates were effective October 15 and should furnish sufficient income to carry the department successfully.

JOHN BOARDMAN,
Water Department Engineer.

Minneapolis, Minn.

Rates:

The water rates are 10c per 100 cu. ft. for all services except to municipal departments, which pay 5c per 100 cu. ft. The minimum quarterly rate for each size of meter is shown in the following table:

Meter Size	Minimum Quarterly Bill
⅝"	$ 1.50
¾"	2.25
1"	3.75
1½"	7.50
2"	12.00
3"	24.00
4"	37.50
6"	75.00
8"	120.00

Services are installed by a licensed plumber, employed by the consumer who is required to pay the following tapping fees:

⅝"	$ 6.00
¾"	8.00
1"	10.00
2"	25.00
3" and over	30.00

A ⅝" tap uses a ¾" pipe, a ¾" tap a 1" pipe, a 1" tap a 1¼" pipe, and all others the same size as the tap.

Consumer purchases, and becomes owner of, meter for the following charges in addition to the charge for making the tap to the main:

⅝" meter	$10.00	plus $1.00 for inspection service
¾" "	14.00	plus $1.00 for inspection service
1" "	21.00	plus $1.00 for inspection service

For all meters larger in size, charges consist of actual cost to this department, plus 10 per cent handling and testing costs, plus $1.00 for inspection service.

No hydrant rental charge is made, and the sprinkler charges, which include private fire hydrants, are as follows:

2"	connection	per	year	$10.00
3"	"	"	"	12.00
4"	"	"	"	16.00
6"	"	"	"	24.00
8"	"	"	"	40.00
10"	"	"	"	60.00
12"	"	"	"	100.00

General Data:

Population served—490,000
Number of services (100% metered)—98,835
Number of hydrants—7,330
Miles of water main—862.5
Supply—Mississippi River
Treatment—Softening with lime, alum
Soda-ash and at intervals, iron sulphate
Raw water—172 ppm $CaCO_3$ Av.
Tap water—75 ppm $CaCO_3$ Av.
Plant capacity—120 mgd for softening, 158 mgd for filtration
Average consumption—40 mgd

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HAZARD

Electrical Wires and Cables

Consumer Costs Per Month:

3,000 gals.	(400 cu. ft.)	$ .40
5,000 "	(667 " ")	.67
10,000 "	(1,333 " ")	1.33

These rates represent approximately a 33¼ per cent increase over those recorded in THE MUNICIPAL INDEX for 1934. The increase was occasioned by the added expense of a water-softening plant constructed since that time. The present rates are sufficient to cover operating and maintenance expenses, repairs, bonded indebtedness, and interest.

EDGAR W. JOHNSON
Engineer
Water-Works Department

St. Paul, Minn.

Water Rates:

Cu. Ft. Per Mo.	Inside City	Outside City
First 10,000	10c per 100	15c
Next 40,000	7c " "	7c
Next 450,000	5c " "	5c
All over 500,000	3c " "	3c

Rates for service outside of city, 15c per 100 cu. ft. first 10,000 cu. ft. per month. Minimum demand charge, 50c per month.

Meters 1" and smaller are read and billed quarterly
Meters 1¼" and larger are read and billed every month
Bills are due when rendered
Failure to receive bill does not excuse non-payment or avoid a penalty

If water is turned off for non-payment or upon request, a charge of one dollar will be made to cover turn-on costs.

The property is held responsible for damage to water meters.

The fixed chargese continues as long as the meter is on the premises. Meter removed only on written order of owner or agent and access provided for recovery.

A charge of two dollars is made for resetting a meter, including turn-on.

FIXED CHARGES
payable with consumption charge

	Inside City	Outside City
⅝" meter	$0.75 per quarter	$1.50
¾" "	1.05 " "	1.50
1" "	1.80 " "	1.80
1¼" "	.85 per month	.85
1½" "	1.10 " "	1.10
2" "	2.25 " "	2.25
3" "	5.00 " "	5.00
4" "	10.00 " "	10.00
6" "	20.00 " "	20.00
8" "	35.00 " "	35.00
10" "	50.00 " "	50.00

The city also has a complete price schedule of street-service connections, representative portions of which are as follows:

	¾"	1"	1½"	Additional	
100' street—1 main	$63.00	$78.00	$104.00	All rock	$50.00
2nd pipe in 1 ditch	44.00	61.00	88.00	5' "	38.00
				2' "	25.00
70' street—1 main	49.00	62.50	82.50	All rock	35.00
2nd pipe in 1 ditch	35.00	45.50	66.50	5' "	26.00
				2' "	18.00
60' street—1 main	45.00	56.00	74.00	All rock	30.00
2nd pipe in 1 ditch	32.00	42.00	59.00	5' "	23.00
				2' "	16.00
50' street—1 main	39.50	47.00	63.50	All rock	25.00
2nd pipe in 1 ditch	29.50	36.00	50.50	5' "	19.00
				2' "	13.00
40' street—1 main	33.50	41.00	54.00	All rock	20.00
2nd pipe in 1 ditch	26.50	31.00	44.00	5' "	15.00
				2' "	10.00
30' street—1 main	30.50	35.50	48.00	All rock	15.00
2nd pipe in 1 ditch	24.50	28.50	41.00	5' "	12.00
				2' "	8.00

General Data:

Population served—288,000
Number of services—67,488
Number of meters—60,010
Number of hydrants—5,415
Miles of water mains—644.3
Supply—Mississippi River, lake and wells
Treatment—softening with lime, alum
Raw water—178 ppm $CaCO_3$
Tap water—74 ppm $CaCO_3$
Average Consumption—23.9 mgd
Plant capacity—70 mgd

Consumer Costs Per Month:
(⅝" meter) in city:

3,000 gals.	(400 cu. ft.)	$ .65
5,000 "	(667 " ")	.92
10,000 "	(1,333 " ")	1.58

This represents approximately a 10 per cent raise over those rates published in THE MUNICIPAL INDEX for 1934, with the increase occasioned by a new softening plant. The water works is entirely self-supporting and should continue to be under this present schedule.

LEONARD N. THOMPSON,
Water-Works Superintendent.

Corona, Calif.

Rates:

(Two rates are available)

REGULAR RATE

First	700 cubic feet, or less	$1.25
Next	1,300 " " " "	.15
"	3,000 " " " "	.12
"	10,000 " " " "	.10
Over	15,000 " " " "	.08

OPTIONAL

First	1,500 cubic feet or less	$1.65
Next	3,500 " " @ 11c per 100	
"	10,000 " " @ 10c " "	
"	15,000 " " @ 8c " "	

MINIMUM BILL

For	⅝" meter	$1.25 or $1.65
"	¾" "	1.75
"	1" "	2.50
"	1½" "	4.50
"	2" "	6.00
"	3" "	10.00

No charge is made for installation of water services, and there is no charge for services for sprinklers for private fire protection.

A charge of $1.50 is made for each fire hydrant owned by the city installed on a 4-inch main or larger, and a charge of $2.00 is made for each fire hydrant owned by the Water Company installed on a 4-inch or larger main. A charge of 50c is made for each fire hydrant owned by the city installed on mains smaller than 4 inches, and a charge of 75c per fire hydrant owned by the company installed on mains smaller than 4 inches.

General Data:

Population served, 8,500
Services (100% metered), 2,150
Hydrants, 105
Miles of mains, 52
Supply, creeks, and wells
Treatment, chlorination only
Tap water, 140 ppm $CaCO_3$
Average consumption, 1.25 mgd
Plant capacity, 2.50 mgd

Consumer Costs Per Month

3,000 gals.	(400 cu. ft.)	$1.25
5,000 "	(667 " ")	1.25
10,000 "	(1,333 " ")	2.20

Regular rates have been reduced slightly under those published in THE AMERICAN CITY for August 1934. Optional rate represents a substantial reduction to larger users. The system is amply supporting under present revenues.

C. M. SCOVILLE,
Secretary, Corona City Water Co.

Framingham, Mass.

Rates:

First 10,000 cu. ft. $.20 per 100 cu. ft.
All over 10,000 cu. ft. .10 " " " "

The minimum charge is $6.00 per year with bills rendered quarterly. A payment of $1.50, minimum quarterly, allows the use of 750 cu. ft. during the succeeding three months without further charge. An annual rental charge is rendered with the regular bill on all meters one inch and over in size at 15 per cent of the cost of the meter.

Applications for the use of water must be made at the office of the Water Department on a form furnished by the Commissioner of Public Works, and must be signed by the owner of the premises or a duly authorized agent. No service is laid until the applicant has made a deposit with the Town Treasurer. On completion of the work, the account is adjusted, and any balance due the Department must be paid or the excess refunded to the user.

A rental on each public hydrant is paid by the town to the Water Department. An annual minimum charge is made for private fire protection services, based on the size of pipe or pipes entering the premises. These charges are payable quarterly in advance as follows:

Each 4" pipe, per year	$15.00
" 6" " " "	27.50

General Data:

Population served—21,500
Number of services—4,575
Number of meters—4,800
Number of hydrants—714
Miles of mains—95
Supply—Gravel packed wells
Treatment—none
Average consumption—1.8 mgd
Plant capacity—3.75 mgd

Consumer Costs Per Month (net):

3,000 gals.	(400 cu. ft.)	$0.80
5,000 "	(667 " ")	1.33
10,000 "	(1,333 " ")	2.07

This represents a reduction of 20 per cent under rates recorded in the October 1940 THE AMERICAN CITY. The department is self-supporting and earns a surplus at the end of each year for the use of new extensions.

HARRY J. BRILLHART,
Superintendent.

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Municipal Law Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS, Washington, D. C.
Charles S. Rhyne, *Executive Director*

Animals—"Horse" Not a "Facility of Transportation"—Governmental Immunity

A statute removing the defense of governmental immunity as to liability of the city for negligence "in the operation of a municipally-owned vehicle or other facility of transportation" was held not to include an injury suffered by plaintiff in attempting to stop a runaway horse owned by the city and used by a policeman in his duties. *Barnadine* v. *City of New York*, 44 N. Y. S. (2d) 881 (N. Y. Sup. Ct., Bronx Co., Nov. 24, 1943).

Automobiles—Injury to Child by City-Owned Truck

Where a child was injured when he ran into or was struck by city garbage truck, judgment for plaintiff will be reversed and remanded, it being contrary to the weight of the evidence. *Kauba* v. *City of Chicago*, 51 N. E. (2d) 617 (Ill. App. Nov. 4, 1943).

Automobiles—Police Car's Negligence Question for Jury

Where plaintiff was injured when struck by a private car after it had collided with city's police car, the question of the city's negligence was for the jury where the police car sounded its horn first and both cars entered the intersection at the same time. *Robinson* v. *City of New York*, 44 N. Y. S. (2d) 939 (N. Y. Sup. Ct. App. Div. Nov. 22, 1943).

Bonds—Extension of City-Owned Power Plant

A bond issue to pay for additional equipment to city-owned power plant held valid where statute provided for issuance for purpose of purchasing or constructing light plants, the new purchase being an extension to the power plant. *City of Rich Hill* v. *Connelly*, 175 S. W. (2d) 834 (Mo. Dec. 6, 1943).

Breakwater—Stoppage of Accretion of —Erosion Caused by

Where a breakwater built by the city brought about a stoppage of the normal flow of sand that in turn led to the erosion of plaintiff's sandy beach and a flooding of his property, held that this was not a taking of private property without just compensation, as plaintiff did not have a vested right in future accretions, and the damage was incidental to the building of the breakwater. *Miramar* v. *City of Santa Barbara*, 143 Pac. (2d) 1 (Cal. Nov. 3, 1943. Reh. Den. Dec. 2, 1943).

Building Inspector—Personal Liability for Acts Within Scope of Duty

Where the building inspector of the City of West Allis in the scope of his duty notified tenants that plaintiff's building did not comply with city ordinance and tenants left without giving notice, the inspector was not liable for any damages resulting from their vacating and action for damages for malicious conduct would not lie. *Miller* v. *Foster*, 11 N. W. (2d) 674 (Wis. Nov. 9, 1943).

Building Permits—Authority of Arbitrators

Where village named one arbitrator and took part in and made no objection to the proceedings, the village was estopped to deny arbitrators' authority to award building permits in action for writ of mandamus for their issuance. *People ex rel. Baltis* v. *Village of Westchester*, 51 N. E. (2d) 990 (Ill. App., Dec. 13, 1943. Reh. Den. Dec. 28, 1943).

City Council—Legislative Action Not Subject to Direction by Court

The Supreme Court was held not to have the power to direct the Common Council of the City of Middletown to rescind or amend and correct in a certain way a resolution they had adopted, since the court could not control or direct legislative action of the council. *Spano* v. *Close*, 44 N. Y. S. (2d) 888 (N. Y. Sup. Ct. App. Div., Nov. 22, 1943).

Civil Service—Post-War Planning Program—Selection of Employes from Private Concerns

In action by plaintiff to compel discontinuance of engagement of private engineering and architectural firms and to require appointment of employes from civil service list, held that New York did not have to use the register but could contract with private concerns in connection with a post-war planning program as such contract did not create an employer-employe relationship but that of an independent contractor. *Civil Service Technical Guild* v. *LaGuardia*, 44 N. Y. S. (2d) 860 (N. Y. Sup. Ct. N. Y. Co. Oct. 11, 1943).

Civil Service—Preference to Disabled Veteran Not on Compensation List

A disabled war veteran was held entitled to preference for a civil service position although his name did not appear on the civil service list and although the Veteran's Bureau had temporarily discontinued compensation because at the time of his application he had received a disability rating. *Mauho* v. *City of Buffalo*, 44 N. Y. S. (2d) 829 (N. Y. Sup. Ct. Erie Co. July 23, 1943).

Contracts—Recovery of Amounts Paid Out by Officers Beneficially Interested

Under a statute which provided that all contracts made by a public officer in which he is personally interested may be avoided, held that a taxpayer could not maintain an action on behalf of the city to recover all amounts paid out on contracts made by interested officers because the contracts were not void, and the goods received could not be returned. *Grady* v. *City of Livingstone*, 141 Pac. (2d) 346 (Mont. July 1, 1943. Reh. Den. Oct. 9, 1943).

Electricity—Expiration of Franchise—Removal of Lines from Streets

City could compel defendant to remove its electric transmission and distribution lines from the city streets where defendant's thirty-five year franchise had expired and a renewal refused. *Texas-New Mexico Utilities Co.* v. *State ex rel. City of Teague*, 174 S. W. (2d) 57 (Tex. Civ. App. June 18, 1943. Reh. Den. Sept. 17, 1943).

Parking—Restriction on Use of Private Road

Traffic regulations as to parking which prevented owner of land abutting the private road from parking in front of his home, was held to be within the police power of the city. *Nemours* v. *City of Clayton*, 175 S. W. (2d) 60 (Mo. App. Nov. 2, 1943).

Pensions—Conviction of Widow for Felony Did Not Forfeit Rights to

A charter provision that "any member" of the police force if convicted of a felony should forfeit all rights to a pension, was held not to apply to the policeman's widow where conviction of a felony came after the pension had vested in her at her husband's death but prior to the change in the charter substituting "any person" for "any member." *McCarthy* v. *City of Oakland*, 141 Pac. (2d) 4 (Cal. App. Sept. 24, 1943).

Streets—Drop-off at End of Corporate Limits—Notice of

Where plaintiff was injured when he ran his car off the paved city streets onto a dirt road outside the city limits which was being constructed by a private realty company, held that since there was no showing of actual or constructive notice by the city of an alleged dangerous condition at the end of the street, plaintiff could not recover. *Wickham* v. *City of Upper Arlington*, 51 N. E. (2d) 739 (Ohio App. Nov. 9, 1942. Just released for publication).

Surface Waters—Discharge from Highway—Prescriptive Rights

The owner of land adjoining highway of Town of Vestal was entitled to have supervisor enjoined from discharging surface water from the highway onto his land although the water had been so discharged from the prescriptive period, as the failure to plead such affirmative defense would waive it. *Foster* v. *Webster*, 44 N. Y. S. (2d) 153 (N. Y. Sup. Ct. Broome Co. Sept. 27, 1943).

Taxation—Illegal Taxes Paid Without Protest Not Recoverable

Payment of illegal taxes imposed by city on intangibles of foreign corporation, not paid under protest or duress, could not be recovered where the statute of limitations had run as to part and there had been no fraud by the assessor. *General Discount Corporation* v. *City of Detroit*, 11 N. W. (2d) 203 (Mich. Oct. 11, 1943).

Taxicabs—Interstate Commerce—Regulation of

An ordinance regulating operation of motor carriers upon city's streets were held not to be discriminatorily enforced or unreasonable as applied to taxicabs engaged in interstate commerce, since it was enacted with the view of relieving congestion on the main retail street of the city and to increase traffic safety. *Derrick* v. *City Council of Augusta*, 138 Fed. (2d) 507 (U. S. C. C. A. 5th, Oct. 20, 1943).

Waterworks—City Liability as Employer—Negligence

Where janitor in city-owned water plant was injured by poisonous dust negligently allowed to be present, it was held that the city was liable, operation of the waterworks being in its private corporate capacity and subject to health and safety statutes. *Lockhart* v. *Kansas City*, 175 S. W. (2d) 814 (Mo. Dec. 6, 1943).

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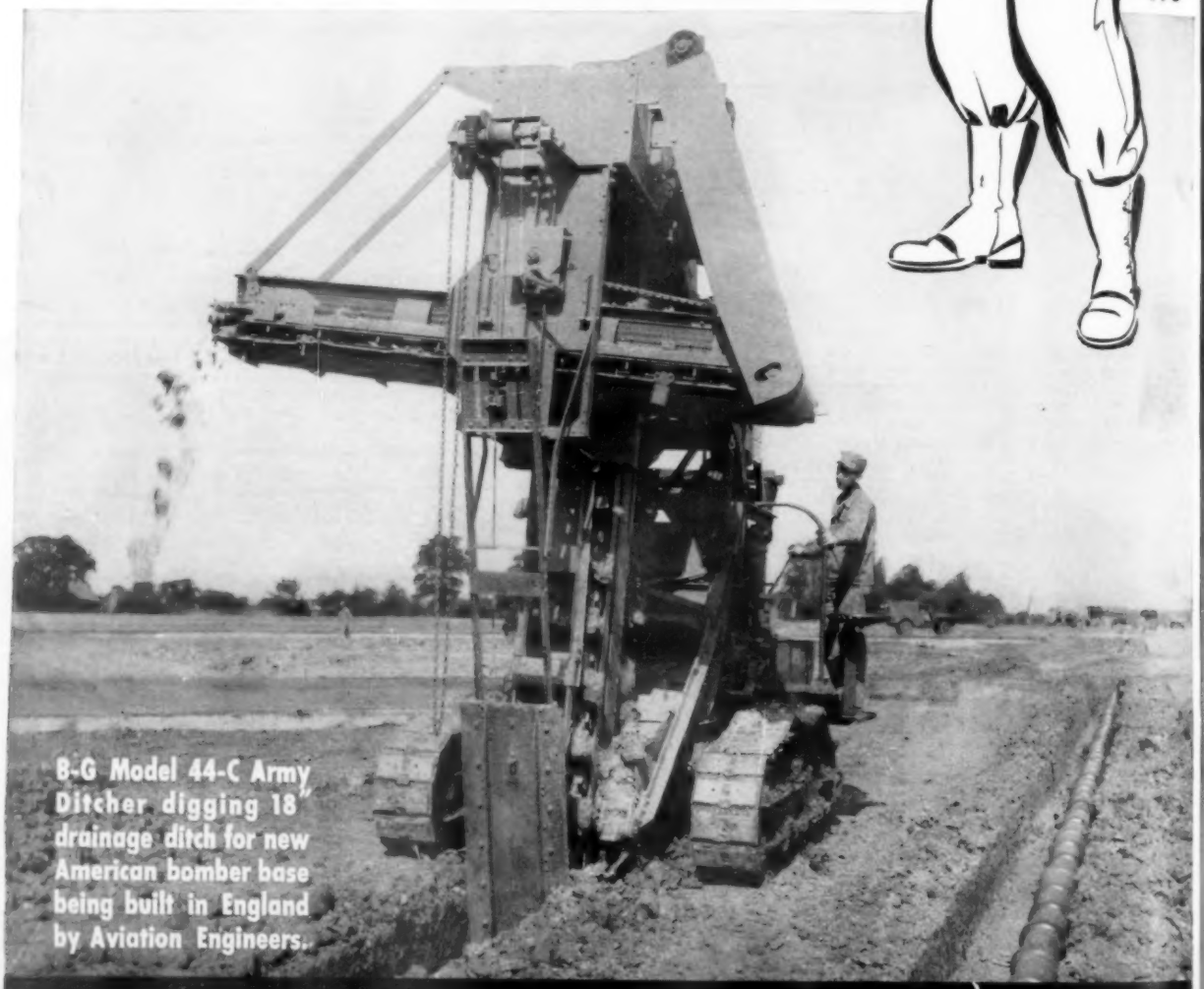

B-G Model 44-C Army Ditcher digging 18" drainage ditch for new American bomber base being built in England by Aviation Engineers.

BARBER GREENE

AURORA, ILL.

Zoning and Planning Notes

Prepared by FRANK B. WILLIAMS
Author of *The Law of City Planning and Zoning*

Land Under Water—Improvement in Aid of Navigation—Erosion—Damages

CALIFORNIA.—*Miramar Co.* v. *City of Santa Barbara*, Supreme Court, November 3, 1943, reported in 143 Pac. (2d) p. 1.

This is an action against the City of Santa Barbara for damage to real estate bordering upon navigable water as the result of the erection and maintenance by the city of a breakwater. The plaintiff company's land is about 2½ miles east of the city. Upon it the company operated cottages and a hotel. About 3½ miles west of this property the city had erected and maintains a permanent breakwater. The plaintiff complains that the effect of this breakwater is to stop the natural flow of sand and to wash away the sand that was there. This action was continuous and progressive, always taking sand but never depositing any to replace the sand that was carried away. In time plaintiff's property was denuded of sand and covered by the sea, so that the line of ordinary high water at high tide was advanced. With the disappearance of the sand the hotel ceased to be a beach resort.

An upland owner may have a right as against an individual to the uninterrupted flow of sand carried to his land by the ocean currents in their natural state, but has no such right as against the state. Littoral rights must give way to any use of the tide lands and water flowing over them that serves the public right of navigation.

Control of Navigable Waters

The federal government has the paramount right to regulate and control the improvement of navigable waters, but the states also may improve their navigable waters, subject to federal control.

Ownership of tide lands is governed by state law, and in California the state is the owner of all lands below tidewater. The littoral rights of an upland owner who owns no title to the tide lands adjoining his property are subject to termination by whatever disposition of the tide lands the state chooses to make. Since navigable waters are held by the state in trust for all people, any conveyance of tide lands is taken by the grantee subject to the public right of navigation. The state retains the right to enter upon such lands and make any erections thereon, or changes therein, as it may find necessary or advisable to adapt the premises for use in navigation and provide access thereto for that purpose.

The state may delegate to a city the power to make improvements in aid of navigation. The plaintiff in this case does not question the right of the city to build a breakwater, but alleges that it was constructed and maintained for the purpose of creating a harbor for pleasure yachts and fishing boats. The right of the public to use navigable waters, however, is not limited to any particular type of craft. Pleasure yachts and fishing boats are used for navigation and the state, or the city as its representative, can provide harborage for them as well as for merchant vessels and steamers.

Barriers and Improvements

Whatever the effect of the breakwater upon the sand, the littoral owner obtained sand only because of the proximity of the land to the water. The relationship between the land and the water can shift as easily as the sand, and the state can alter it by a variety of improvements. It can even bar access to the water from the land, in the improvement of navigation, without compensation. Since it is free to set up a barrier that leaves the land without access to the sand, it can clearly erect an improvement that merely checks the flow of sand to the land. There can thus be no vested right in such future accretions.

Inevitably the washing away of sand in tide lands must advance the high water mark if the owner of the uplands takes no steps to prevent it. Plaintiff's insistence that the highwater mark preceding the erection of the breakwater must be maintained is in effect a claim that the state has no right to check the flow of sand and must maintain the tide land sand as a buffer for the upland sand. Such a claim could not be recognized without creating a servitude in the tide lands inconsistent with the state's title and its right to erect improvements in the interest of navigation.

Plaintiff, as an upland owner, was entitled to the advantage of the accretion of the sand, but had no right to its perpetuation, since its right was always subject to the state's right to terminate it in the improvement of navigation without compensation. The withdrawal of the sandy accretions, constituting the damage to plaintiff's land, was an incidental consequence of the state's use of the public domain (land under water) for a public interest that was at all times superior to private littoral rights. There was therefore no taking or damaging of private property for public use within the meaning of the constitution of the State of California.

Private Streets—Traffic Regulation

MISSOURI.—*Nemours* v. *City of Clayton*, St. Louis Court of Appeals, November 2, 1943, reported in 175 S. W. (2d) 60.

This is a suit for an injunction to prevent the City of Clayton from regulating traffic on a private street called Glen Ridge Avenue, in a restricted residential area within the city. The trust deed provided that all the owners of lots abutting on this street should have free access to the street, with the right of passage over it, subject to such reasonable restrictions as the trustees and the lot owners might prescribe. The fee ownership in the street was in the trustees, for the benefit of the lot owners.

Save for a week or two each year, when its north and south exits are closed alternately to prevent the public from obtaining any easement of passage over it, the street is not only permitted to be open for public traffic, but is extensively used for this purpose, both by persons living on the street, and by those members of the general public who have business on the street, or desire to use it as a thoroughfare to other parts or the city. "In other words," the court states in its opinion, "so far as its use is concerned, it is to all intents and purposes a public street and is regularly made use of by automobiles, trucks, and other vehicles. * * This is of course not to say that there is any actual invitation extended to the public, but only that the public is allowed to use the street with the knowledge and tacit consent of the owners of the lots and their agents, so as to have amounted to an implied grant of a license for such use subject only to the right of revocation at any time the owners may elect."

Since 1923 the use of Glen Ridge Avenue as a traffic area has greatly increased, so as to create a serious traffic hazard.

With a view to relieving this condition and with the consent of the lot owners, the city installed automatic traffic control signals. Then the city amended its traffic regulations upon its "public streets" by defining the terms "street or highway" in these regulations as "every way or place open for vehicular travel by the public, regardless of its legal status and regardless of whether it has been legally established by constituted authority or by user for the statutory period of time as a public highway," and inaugurated a control system.

The plaintiffs complain of these regulations because they create traffic lanes which make entrance to their driveways more difficult, and prevent parking at certain places near their homes.

The defendant city justifies its actions as a proper exercise of the public power, under which the city may regulate traffic upon all streets within it rightfully used by the public regardless of their legal status; it being the public use that gives rise to this right, irrespective of title to the land of the streets.

The injunction is therefore denied.

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Traffic Control and Facilitation

Conducted by Traffic Control and Facilitation Committee, Institute of Traffic Engineers, 60 John St., New York

W. F. MILNER, Chairman; DONALD S. BERRY, FRED W. FISCH, MAXWELL HALSEY, WILFRED F. IRVIN, HARRY C. KOCH, PHILIP S. MANCINI, CLAUDE N. MAURER, WILLIAM R. McCONOCHIE, W. L. ROBERTSON, I. S. SHATTUCK, GEORGE M. WEBB

Do Transit Coaches Injure Pavement?

A Survey Covering Twenty-Six Cities

By MONROE L. PATZIG
Patzig Laboratories
Des Moines, Iowa

PRIOR to the introduction of trackless trolley buses and motor buses, it has been a general custom that the street railway systems of our various cities assumed the costs for the pavement and maintenance between the rails and a foot or more outside, in addition to providing and maintaining ties, rails, roadbed and wires.

With the introduction of these coach systems in place of street cars, the operating companies have been rather systematic in securing revisions in laws, ordinances and franchises whereby they no longer can be assessed for the costs of paving, resurfacing, repaving, maintenance or repairs. Instead of bearing their proportion of the costs for the pavements and maintenance, they are now generally charged a nominal annual fee, such as a use tax. Such fees are generally based on a small percentage of the gross passenger revenues, or an annual charge per bus.

It seems that this was done before there was sufficient experience with the effects of such motorized traffic upon the street and pavements. At least it appears strange that, with the increasing amount of damage they inflict on the pavements, their obligation to provide for new construction and maintenance has been greatly lessened.

Due to a recent experience with a trolley coach system whose operations suddenly caused serious failure in a pavement that otherwise had ample strength and usefulness, it was deemed advisable to collect data from other cities having similar transportation facilities.

A statement was made by this traction company to the effect that: "It is interesting to realize that trackless trolleys of exactly the same weight, or even heavier, are operated on pavement in 75 different cities in the United States, and that in no instance is there any record of pavement destruction by such operation."

The names of the 75 different cities in which such trackless trolleys were in use were not obtainable, therefore a questionnaire was prepared and sent to 35 cities to see what facts could be revealed by such a survey.

Answers to the following questions seemed most important and useful for this study. Returns have been received from 26 cities, or more than 72 percent of them. Their replies are given in the following tabulation, insofar as the answers were applicable, and the cities are keyed in the order of receiving replies from them. Cities from all portions of the nation have been heard from and they range in population from 76,000 to 3,400,000. Following are questions and a summary of the answers:

1. **Ownership of the transportation system?**
   22 cities report private ownership; two municipally owned and two partly private and municipally owned.
2. **Seating capacity of trolley coaches?** Varies from as low as 20 to as high as 75. Only one city reports bus seating capacity of 75, two report up to 50, seventeen or nearly 50 percent of them give seating capacities between 40 and 46 passengers.
3. **Weight of loaded trolley coaches?** From 12,000 to 35,000 pounds: Ten were under 30,000, four were 30,000, seven over 30,000 pounds, and five cities did not report.
4. **Have the trolley coaches damaged pavements?**
   Nineteen cities (73 percent) said "yes," six reported questionable; only one city did not answer this question.
5. **What revenues are derived rom trolley systems?**
   1 city reports an annual revenue of 5 percent of gross receipts.
   1 city reports an annual revenue of 2 percent of gross receipts.
   2 cities report an annual revenue of 1½ percent of gross receipts.
   1 city reports an annual revenue of 1 percent plus $50 per bus.
   1 city reports an annual revenue of ¾ percent plus contributions.
   1 city reports an annual revenue of ½ percent of gross receipts.
   1 city reports an annual revenue of $24 per bus wheeltax.
   1 city reports an annual revenue of $50 per bus.
   1 city reports an annual revenue of $50 per bus plus $23,000.
   1 city reports an annual revenue of $320.31 per bus.
   1 city reports an annual revenue of $1,200 per year.
   1 city reports that they receive a 10-year maintenance on pavements.
   10 cities report that they receive no revenues from them.
   1 city reports that the revenue is undetermined.
   2 cities made no reply.
6. **Are these revenues sufficient for maintaining and repairing the pavements used by them?**
   Seventeen, or 68 per cent of them, very definitely say "no," two cities say "yes," six are doubtful, one city made no reply.
7. **What portion of repaving or resurfacing costs are assessed to the abutting property?**
   Twelve cities report no assessments are thus made, two indicate that all of the costs are thus assessed, eight that partial assessments are made, and four cities do not reply.

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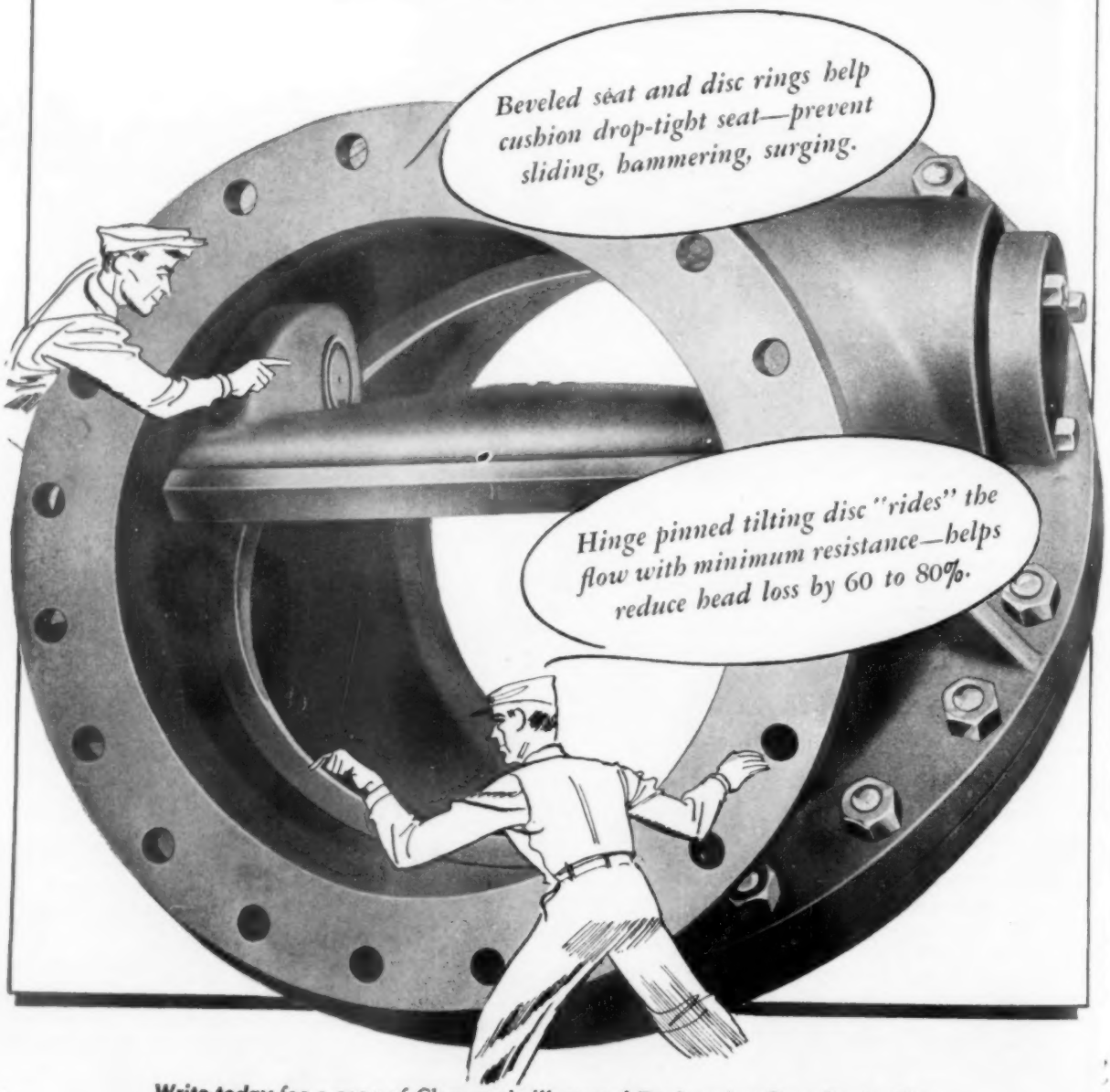
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8. **What portion of above is assessed to the transportation system?**

   Eighteen cities report no assessments made. One that they are made for truck areas, one that they are undetermined. Six cities made no reply.

9. **From what source does the city receive funds for improving, repairing or maintaining the pavements?**

   Question not on original questionnaire but a few unsolicited replies were received and other cities then asked. Eight indicated a refund from their respective states from gasoline taxes; two funds from traction companies; one, from the State Highway Department.

Motorcycle Officers

ON January 11, 1944, 26 new motorcycle officers began riding Los Angeles streets to enforce traffic laws, bringing the total enforcement strength of the motorcycle unit to 134 men.

During inspection ceremonies, which were held on January 10, these new motorcycle officers were instructed to be alert for traffic violations which are conducive to accidents.

Although all traffic laws are to be enforced, a particular effort is being made by all motorcycle officers to apprehend drunken drivers, reckless drivers, speeders, persons who violate the right of way of pedestrians and other motorists, and jaywalkers.

These new motorcycle officers have just completed a course of classroom and riding instruction of three-weeks duration. To be eligible for appointment to the motorcycle unit, they had to pass successfully an intelligence examination and coordination test. Only duly appointed police officers of Los Angeles have been appointed to the motorcycle unit.

More Public Toll Routes?

COVERING the history, theory and practice of toll routes, Fearson Shortridge, Manager of the New York City Tunnel Authority, addressed members of the Alumni Association of the Traffic Managers Institute of New York in March as follows:

"The custom of charging tolls is a modern development, for a very different purpose from the medieval practice of levying tribute on travelers. Today tolls are charged for use of improvements of considerable benefit to the tollpayers. Of particular importance are well-designed, adequate connections at both ends of any toll facility since, usually, this facility is not an end in itself but only part of the route to a destination. For instance, original plans for the Queens Midtown Tunnel, included an express highway extending from the Queens portal of the tunnel as far as the junction of Horace Harding, Queens, and Woodhaven Boulevards. Failure to construct this express highway along the full length originally contemplated has prevented the tunnel from functioning with maximum usefulness. However, its completion by the city of New York through the office of the Borough President of Queens is to be an immediate post-war project. Similarly, plans are being studied for a mid-Manhattan underpass connecting the Queens Midtown Tunnel's Manhattan end directly with the Lincoln Tunnel's and at the same time connecting the East and West Side express highways. These projects will enable the Queens Midtown Tunnel to serve the greatest number of motorists.

"There is no such thing as a free route for travel," explained Mr. Shortridge, "even when no tolls are charged: all such routes are paid for by taxpayers." Recent trends have been in the direction of public agency operation of toll facilities for public benefit as against private operation some years ago.

Post-War Traffic Already Starting

IN the post-war construction of streets and highways it will be highly important to include proper attention to needed lighting in the initial plan. There is a real danger that in the urge to "get going" on construction as a means of providing employment in the industrial reconversion period following the war, lighting, signals, signs, and other protective measures may be omitted in the feeling that they can be added later. When that happens the road may be actually open to traffic before these measures are applied—with a serious loss of life and property resulting. This happened too often in pre-war days and the danger of it happening after the war is much greater unless planning is started in adequate time and emphasis is placed on complete design.

In some ways the general subject of post-war traffic safety is becoming immediately important. The large numbers of returning service men and women with physical or emotional impairment which may affect their adjustment to civilian traffic conditions, means that we are beginning to enter the equivalent of a post-war era although the war is still on and going at an increasing tempo.

EARL J. REEDER
Chief Traffic Engineer
National Safety Council, Chicago

Automobile "Automat"

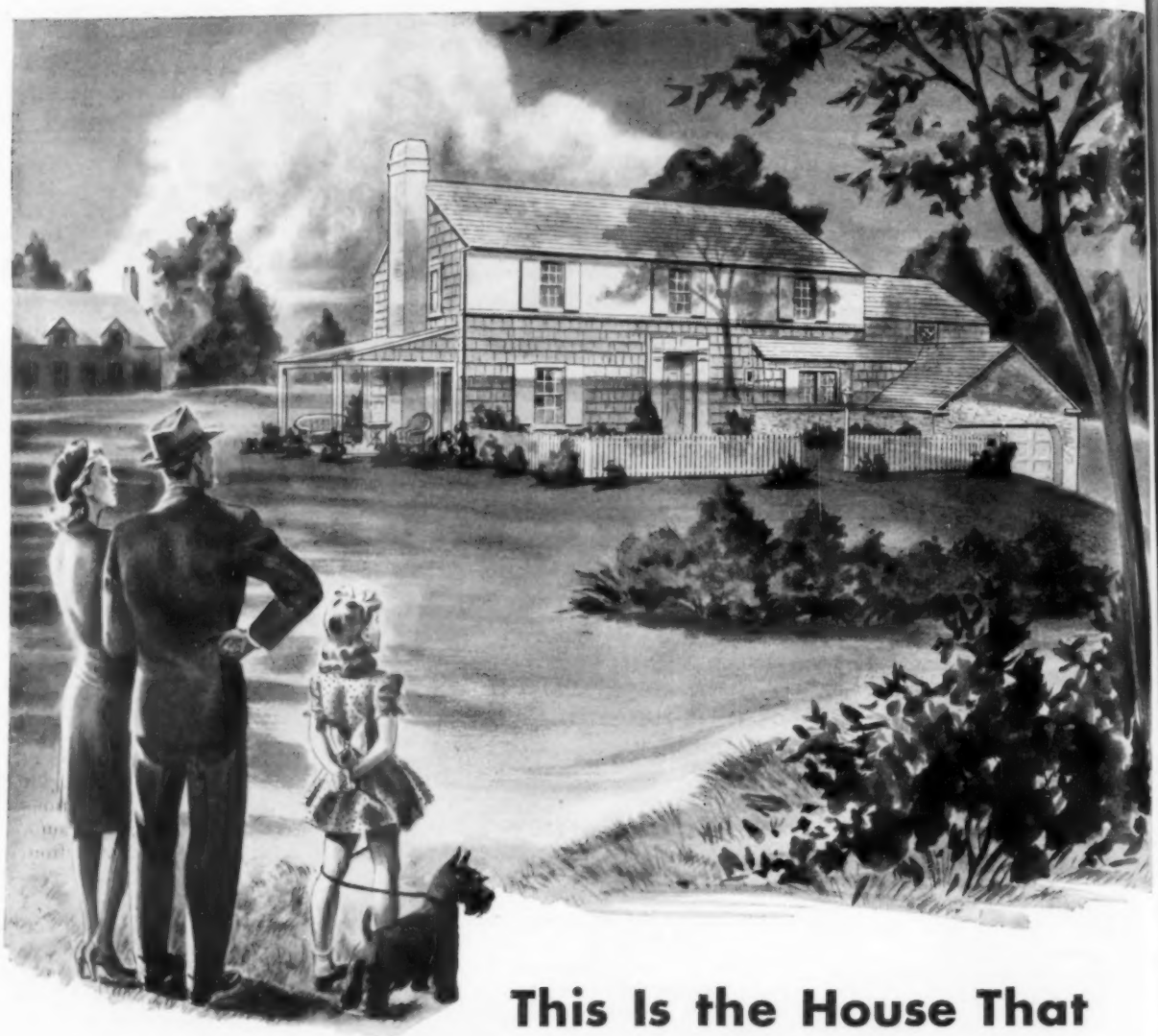
A NEW development for the parking of automobiles, which completely eliminates attendants handling or driving the cars and makes it possible to park as many as 240 cars in a comparatively inexpensive prefabricated structure 30 x 60 feet by 12 levels high, has been perfected by a group of engineers and business men in Los Angeles.

The feature of this development is the method in which cars are taken from the entrance to the building and parked in any part of the structure automatically. The system employs an automatic device that moves the car by grasping the bumpers and sliding it to an elevator and thence to various levels of the building, where the automobile is automatically removed from the elevator and placed in stall.

An attendant controls the moving of the car from the parkway to its stall by pressing a button on the master control board at the entrance of the building. The car is returned to the customer at the exit by pressing the "out" button for the stall in which the car is parked. This new system of parking can place a car in a stall, or return it, in 22 seconds. Manufactured by Park-O-Mat Co., 816 W. Fifth St., Los Angeles 13, Calif., this system is intended for the convenience of department stores, hotels, and other buildings having a major problem in parking customers' cars in shopping areas. Its progress will concern traffic, police, and municipal authorities.

Got a Copy of Buffalo's Post-War Traffic Plan?

THE Buffalo, N. Y., Post-War Traffic Plan prepared by Buffalo's Traffic Advisor, Henry W. Osborne, is being distributed free to mayors, city managers, motor vehicle, and highway commissioners, utility executives, and municipal signal and traffic engineers, by Hal M. Bourland, Secretary, Street and Highway Lighting Safety Bureau, 155 East 44th St., New York 17, N. Y.



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Post-War Traffic Perils and Remedies

THE all-time high of 40,000 people killed on roads and streets in 1941 is fully remembered by traffic and highway engineers, educators and enforcement officers. That figure comes close to the total number of American servicemen killed in the first 27 months of World War II. Action must be taken to forestall a repetition of those fatal accidents after the war.

With that thought in mind, all branches of the street and highway industry and profession met in New York on April 14 in a Highway Traffic Conference under the auspices of the Eno Foundation for Highway Traffic Control. Addresses pointed specifically to causes for the rapid growth in highway accidents and to the remedies.

Charles M. Upham, Engineer-Director of The American Road Builders' Association and Vice-President of Eno Foundation, outlined some of these major factors. "As we emerge from this war," he said, "we will be faced with deteriorated road and street systems. Today, even maintenance necessarily is being neglected to an alarming degree. Shortages of manpower, materials and equipment have placed the highway agencies in the position of watching good highways become bad highways; of seeing highways, which with proper maintenance would last another five or ten years, disintegrate into rough and dangerous arteries. Beyond the need for adequate highways from the safety standpoint, this nation must have a considerably improved network of roads and streets to meet economic needs. The nation's social and business life is built around the motor vehicle, yet by and large highway construction has been treated as a necessary evil. Studies by the United States Public Roads Administration have demonstrated beyond all doubt that before the war our highways were wearing out faster than we were building them. All highway administrators face an unprecedented problem. We must not wait for the end of the war to make our post-war plans. We can see the immediate post-war problem quite clearly, and by starting our cooperative work now we can be ready with a safety program and a highway construction program that will not only save people's lives and limbs, but will assist materially in solving the employment and economic problems that are bound to arise."

Speaking on the Functions and Responsibilities of Traffic Engineers Harold F. Hammond, President, Institute of Traffic Engineers, said, "One of our main objectives will be to segregate through and local traffic. We must depend more and more on one-way streets and limited-access highways. Public transportation terminals will help solve many problems as will off-street parking facilities. More stress must be put on the protection and care of the pedestrian. For good traffic operations all departments will have to work closely together, particularly regarding the use and type of sign and signal equipment. Education of the public involving traffic safety and precautions is essential, and close cooperation with police departments will all help in reducing and maintaining reduced traffic accident figures."

One of our chief problems is programming good city streets, said Burton W. Marsh, Director of the Traffic Engineering and Safety Department, American Automobile Association, Washington, D. C. Too many city streets have been neglected in the midst of more urgent traffic needs, and statistics show that one-half the traffic accidents occur on city streets. There are numerous reasons for the unsatisfactory condition of these streets, a main one being the growth of suburban areas and the resulting decentralization of business centers. In many instances traffic hazards have been caused by poor parking facilities, another cause for shifting business areas.

Dr. Herbert J. Stack, Director, Center for Safety Education, New York University, pointed out that along with sound designing, engineering and building of streets and highways, equal stress must be put on the education of pedestrian and driver, with whom "much of the trouble lies." Dr. Stack urges high school and college courses teaching proper handling of a car by drivers of any age.

Other Remarks

H. G. Sours, Director, Ohio Department of Highways, Columbus, Ohio, said of traffic facilities:

"The most urgent problem today and in the immediate future in many states is that of providing adequate traffic facilities in the urban areas, particularly those of metropolitan character. We need, in these areas, highways which will collect, carry and distribute large volumes of traffic quickly and safely. The peak hour problem in many such areas has almost hopelessly snarled traffic on the existing facilities. Limited access or express ways provide the logical solution. The progressive highway engineer, planner and designer will waste little time in the future trying to solve major urban arterial problems by means of street widening. Major street widening projects usually involve disproportionately high right-of-way and damage costs and the functional advantages gained are often disappointing. We still have the interruption of traffic by intersecting streets; we merely increase the number of lanes but not to any great extent the speed or even the safety.

"Express ways entering cities should be located either on blighted or on undeveloped property as much as possible, leaving the existing streets to serve local traffic. Intersections and interchanges should be limited to the principal collection and distribution points. Grade crossings, both railroad and highway, should be separated."

It was D. Grant Mickle, Traffic Engineer, Automotive Safety Foundation, who formulated the following regulations to aid traffic solutions:

1. "The operation of traffic signals should be discontinued where traffic falls below accepted minimum standards.

2. Traffic signals should be placed on flashing operations when volumes fall below certain minimums.

3. Signal cycles should be as short as possible.

4. The proportion of the cycle devoted to the green period should conform to the relative volume of traffic per lane on each street.

5. Where traffic volume fluctuates widely during the day, cycle length or the division of the cycle should be altered at the appropriate time to fit the changed conditions.

6. Fixed time signals within one-quarter mile of one another, and controlling the same roadway, should be coordinated to provide progressive traffic movement and reduce the number of vehicle stops.

7. Eliminate *unnecessary stop signs.*

8. Traffic regulations, such as those governing turning restrictions, through streets and parking should be reviewed and revised to expedite vehicle movements where the war has either increased or decreased traffic.

9. A system of primary war transportation routes, to which preferred traffic control treatment would be given, should be designated in every municipality. Such routes should consider the needs of both workers and vehicles carrying war materials."

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Outdoor Lighting

STREETS — HIGHWAYS — FLOODLIGHTING

Cost of Roaming in the Gloaming

This study, made by a National Safety Council Committee for the Office of Civilian Defense preserves for communities throughout the country the accident experience due to the reduction of visibility below normal required for traffic safety at night. Its comprehensive findings, condensed here, are a timely warning against curtailments in street lighting after the war, and should furnish sound encouragement to post-war relighting plans in every night-blind community.

TRAFFIC accident data for comparable periods before and after the inauguration of dimouts were obtained for approximately 20 representative areas about equally divided between the East and West coasts. Some were cities, others were rural areas, and still others were combinations of the two for which the data are not separable.

A summary of the fatalities for comparable periods before and after the inauguration of dimouts in the areas which furnished reports, is given in Table I. While the numbers of fatalities are quite small for different classifications in some of the areas and the percentage changes are, thus, not particularly significant, the totals of all of the areas are adequate to show trends.

While total day fatalities were down 28 percent, total night fatalities were down only 10 percent. Without attempting to adjust these percentages for changes in traffic volumes or any other factors that may affect the day and night accident experience, comparison of the trends in the "pedestrian" and "other" classifications helps to interpret the differences in the above figures. While day and night "other" fatalities decreased 43 percent and 40 percent, respectively, the corresponding changes in pedestrian fatalities were 18 percent reduction for daytime and 3 *percent increase at night*. As the "other" fatalities mainly involved two or more vehicles equally visible to each other, they may be considered more nearly indicative of the general accident trends exclusive of the dimout than the pedestrian accidents in which the victims are at a great disadvantage from the standpoint of visibility. This conforms with general peacetime experience in which pedestrians are the greatest accident sufferers during reduced visibility and pedestrian accidents experience the greatest reductions when visibility is improved by better lighting.

The accident experience for different types of areas also was analyzed. Here both fatal and personal injury accidents are included in all of the cases for which this information was available, to provide more stable information for the different areas.

The areas in group A were all 60 percent or more visible from the sea. This means that they experienced the most radical reductions in total visibility, effected by reductions in headlighting and street lighting to reduce both sky glow and direct exposure of lights to the sea. To aid in comparison, since some of the changes were reductions and others increases, these changes have been expressed as ratios of the accidents during dimouts to those before.

The ratio 1.76 for night *pedestrian* accidents was about a third higher than the ratio of 1.32 for those in the daytime, both having increased during dimouts. While *other* accidents decreased both night and day, the ratio of 0.84 for night showed a trend about a fifth higher than the 0.70 for daytime. These show a serious effect of dimouts on all accidents at night in the Group A areas, with the greatest effect on pedestrian accidents.

New York City stands alone in Group B because of special regulations. The city is not all visible from the sea, but to avoid the necessity for marking the boundaries of "visible" zones, a special regulation requiring parking lights only was applied to the entire city. The records were available only for fatalities. The ratios show a much worse trend in pedestrian accidents at night than in the daytime. The trend in "other" fatalities was similarly unfavorable at night, but the total number was small. The effect of dimouts upon accidents in New York City was, thus, even more serious than in Group A, with pedestrians the main sufferers.

Group C contains all of the reporting areas on the East Coast with the exception of New York City. The ratios of accidents after and before the inauguration of dimouts show that there were reductions in all types of traffic accidents. The night pedestrian accident experience was less favorable than the day experience, although the reverse was true for other accidents. Reports indicated the gen-

Good Living Goes with Good Lighting

ADVANCES in product design undertaken by street lighting equipment manufacturers prior to the war will make it possible for you to offer your citizens greater nighttime comfort and safety . . . *better living* when peace comes.

While these improvements do not render obsolete previous street lighting installations, they do call for a re-appraisal of the possibilities in municipal modernization.

If you have been measuring the benefits of street lighting by installations which may have been made 10 to 30 years ago, we urge you to investigate the equipment that will be available to you after the war.

A thorough knowledge of what can be done in the way of eliminating traffic hazards and enhancing the appearance of business districts may give you an entirely new slant on postwar reconstruction.

Union Metal's street lighting specialists will be glad to work with you. Catalogs and other helpful literature are free on request. Write to The Union Metal Manufacturing Company, Canton 5, Ohio.

UNION METAL

Largest Producers of Street Lighting Standards

eral reduction in street lighting to be less than in New York City and the use of headlights with the upper half shielded for driving obviously provided better visibility than parking lights.

In Group D, including interior zones on the West Coast, there was no reduction in headlighting and an average of about 5 percent reduction in street lighting. The trend in night accidents of all classes was more favorable than the trend in day accidents, although the differences were not great.

The ratios for these four groups, without consideration of any traffic changes, show that night accidents increase with reduction in illumination from street lighting and headlights. Data concerning trends in traffic volumes day and night, some taken from actual observations and others estimated, indicate an average reduction of about 20 percent in all of the groups in the daytime and about 30 percent at night. If the ratios were to be corrected for these estimated changes in traffic volumes, the night ratios would be increased about 15 percent more than those for the daytime, thus emphasizing further, the over all effect of the dimout upon the night accident problem.

Pedestrian Fatalities In Dimout Areas

Under "% Change" — = Reduction + = Increase
For Equal Periods Before and During Dimouts

Areas	Periods before and during Months	Pedestrian Fatalities					
		Day			Night		
		Before	During	% Change	Before	During	% Change
Maine	12	12	4	— 67	16	13	— 19
New Hampshire	6	2	1	— 50	1	0	—100
Massachusetts, early dimout, urban	7	8	2	— 75	13	14	+ 8
Massachusetts, early dimout, rural	7	5	1	— 80	2	3	+ 50
Massachusetts, later dimout, urban	3	3	9	+200	49	22	— 55
Massachusetts, later dimout, rural	3	2	1	— 50	9	8	— 11
Boston	10	13	19	+ 46	52	36	— 31
Connecticut, 27 coastal cities, early dimout	6						
Connecticut, coastal cities, recent dimout	3	6	1	— 83	14	15	+ 7
Connecticut, inland cities, recent dimout	3	4	0	—100	14	6	— 57
New York City	3	121	108	— 11	157	234	+ 49
Newark	6	6	15	+150	24	28	+ 17
Maryland, three coastal counties	4	1	2	+100	4	2	— 50
Delaware	9	0	0	0	0	3	∞
Norfolk, recent dimout	3	0	1	∞	2	4	+100
Norfolk Area	6	3	5	67	2	15	+650
Charleston, early dimout	6	5	1	— 80	9	0	0
Charleston, later dimout	4	0	0	0	2	0	—100
San Diego	8	11	4	— 64	26	37	+ 42
Long Beach	10				22	36	+ 64
Los Angeles, area visible from sea	6	1	6	+500	14	18	+ 29
Los Angeles, area not visible from sea	6	41	30	— 27	106	60	— 43
Santa Monica	3						
California, Routes U. S. 1 and 101	3						
San Francisco, area visible from sea	7	5	0	—100	8	13	+ 63
San Francisco, area not visible from sea	7						
Oregon, 8 cities on U. S. 101	5	0	2	∞	4	2	— 50
Oregon, rural sections on U. S. 101	5	0	0	0	0	1	∞
Portland	5	0	1	∞	20	12	— 40
Seattle	9						
Total		243	198	— 18	537	554	+ 3

At and Between Intersections

In general, the effect of reduced visibility in dimouts was slightly greater between intersections than at them, although there were exceptions. As in New York City where a combination of reduced street lighting, the use of parking lights on automobiles, and the masking of traffic signals made visibility at intersections particularly low.

In all of the three cities for which the data were available, the ratios of accidents following the masking of signals to those before were higher at intersections with signals than they were for the same periods at intersections without signals. Assuming that the changes in exposure were similar at the two types of locations, it is quite obvious that the masking of signals resulted in lowered visibility and greater hazards.

The following is a recommended program of controlling accidents in dimout zones. It is presented in outline rather than in detail because normal conditions might vary in different dimout areas and adaptations would have to be made locally.

1. *Establish a Uniform Dimout Speed Policy.*
2. *Enforce Pedestrian Regulations.*

Direct the enforcement program at such pedestrian violations as walking against the red light; crossing between intersections (except at marked crosswalks) in business districts and on busy residential streets; failing to walk on the left side of the road, facing traffic, when necessary to walk on the traveled roadway due to lack of sidewalks; failing to yield the right-of-way to vehicles when crossing between intersections in residence districts; standing in the road to solicit rides.

3. *Enforce Headlighting Restrictions*
4. *Enforce Other Driving Regulations.*

Require drivers to keep brakes in good condition for sudden stops if necessary and windshields clean for best visibility, and to obey all regulations concerning right-of-way to other vehicles and pedestrians, particularly when making turns at intersections.

5. *Use Signs, Signals, and Markings*

a. Make liberal use of reflectorized centerlines in zones visible from the sea, particularly on the main streets and highways as at curves and irregular intersections.

b. Provide adequate markings to identify the boundaries of "visible" zones with special headlighting requirements. These markings should include reflectorized signs, pavement markings, and special treatment of street lights.

c. Make liberal use of properly marked pedestrian crosswalks for the benefit of both drivers and pedestrians.

6. *Get the Maximum Benefit from Permissible Street Lighting.*

a. Retain maximum permissible advantage of street lights in "visible from the sea" zones by shielding the seaward side of only those lights that are actually visible from the sea.

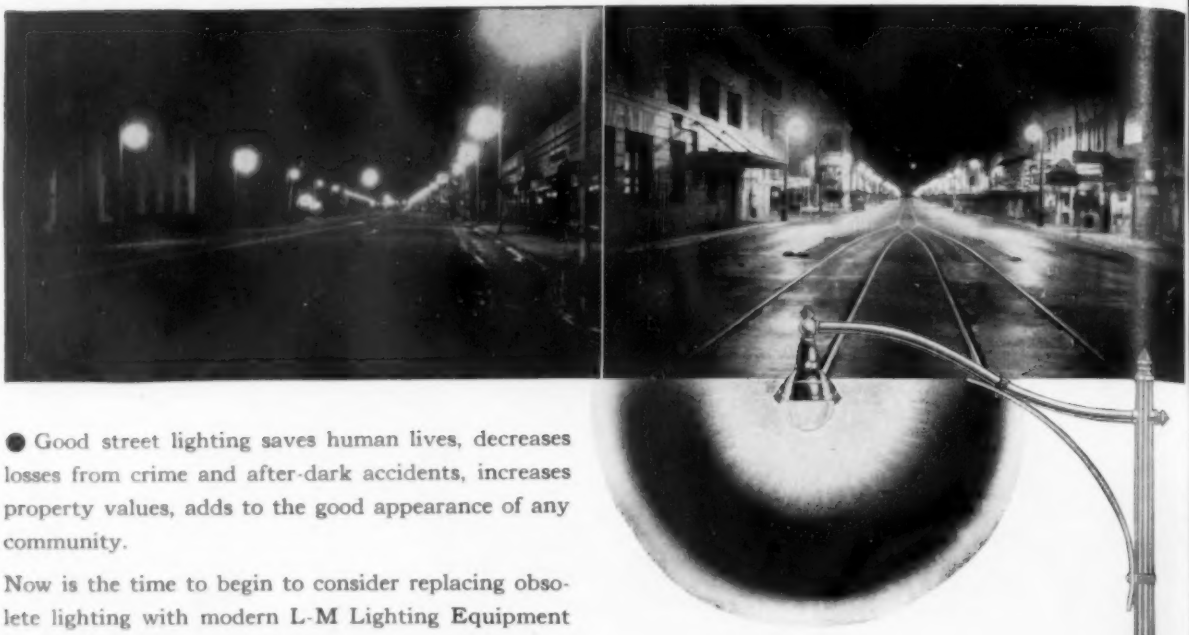
b. Consider the desirability of modifying street lighting schedules in dimout areas to permit more lights to remain on throughout the night to compensate for restricted illumination due to shielding against sky glow.

Should Post-War Wires Be Overhead or Buried?

HOW many cities making post-war street-lighting plans are giving consideration to putting the lighting circuits underground? Any such consideration can, of course, extend to all wires on poles within the city limits. This is less of a problem with cities owning their own electric utilities than where a private utility distributes energy.

Nevertheless, before the war there was a growing effort to get rid of overhead wires in cities. As is well known, wires can either be placed in underground ducts or, particularly in outdoor areas, buried directly in the earth.

For a number of years cable companies and utilities have been giving much attention to cables which can be buried directly in the ground. There are two types of these cables—parkway and non-metallic sheath. Despite the fact that the first type has been available for a quarter of a century and the second type for around 15 years, their adoption has taken a



● Good street lighting saves human lives, decreases losses from crime and after-dark accidents, increases property values, adds to the good appearance of any community.

Now is the time to begin to consider replacing obsolete lighting with modern L-M Lighting Equipment designed and built for tonight's traffic conditions.

Everything you need for every type of Outdoor Lighting . . . street . . . highway . . . plant . . . or sports . . . is found in the L-M line. Not only the latest and most efficient designs in standards and luminaries, but transformers, cutouts, relays, glassware and time switches.

L-M Outdoor Lighting Parts are the economical and efficient replacement for all standard makes of street and protective lighting equipment. Ask your nearest L-M Field Engineer about L-M replacements for broken globes, reflectors, receptacles and sockets.

For full information write to Line Material Company, Milwaukee, Wisconsin.

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Transformers · Fuse Cutouts · Lightning Arresters · Oil Switches · Pole Line Hardware · Line Construction Specialties · Underground Equipment · Fibre Conduit · Street Lighting Equipment

LINE MATERIAL COMPANY

OUTDOOR LIGHTING SYSTEMS AND PARTS

conservative course. This little reminder of their values might, therefore, be helpful at this time of planning.

The parkway type consists, in order, of the copper conductor, insulation of rubber or varnished cambric, lead sheath, jute bedding to protect the lead, two flat steel tapes, with saturated jute over all. The non-metallic sheath cable of the trenchley type consists of the conductor, rubber or synthetic rubber insulation, with fibre cover or with rubber or synthetic rubber jacket.

Both these types are suitable for direct burial in the ground without any further protection and are installed by plowing or trenching. They are used for either multiple or series-lighting systems. Which to use depends on several factors, including the character of ground. Where sharp rocks or other mechanical hazards are present, parkway cable is generally used, though the non-metallic sheath construction can also be employed and it has given a good account of itself in service. This newer type is more susceptible to lighting trouble in exposed areas; and faults in buried cable are, of course, more difficult to locate than are those in ducts or overhead.

Buried cable for both distribution lines and lighting are especially suitable for new developments, in good residential districts where it is desirable to put the wires underground for aesthetic reasons, for parks, recreation areas, playfields, airports, and the grounds of institutions. The advantages are that they furnish reliable service and, not requiring ducts and thus saving material and labor costs, entail considerable lower investment cost.

Street Lighting Modernization by Conversion

Line Material Controlites at Miami Beach, Fla.

WHEN Grandfather was a boy, the individual transportation of the day was the horse-drawn vehicle—slow but sure. "Uptown" in those days boasted a public lighting system—perhaps gas lights—perhaps carbon-arc electric lights.

Since that time transportation has made tremendous strides and problems of traffic safety, entirely unknown to Grandfather, have developed. Nevertheless, as shown by recent surveys, much of our street lighting is still in the horse and buggy stage. Fortunately, indications point to a strong awakening—a determination to improve service—to modernize.

Modernization in many cases can be achieved without the necessity of making a large outlay in new investment. Frequently the adaptation of modern light control devices to existing equipment will be all that is needed to eliminate some death trap.

Typical of the kind of planning now being done by leading utilities is the conversion of the open radial wave luminaire to the enclosed style.

In this conversion, the radial reflector is removed and the enclosed reflector installed in its place simply by releasing the reflector clips with a screwdriver. Neither wire nor brackets need be disturbed in this simple operation, reducing labor to a bare minimum.

This "conversion," be it understood, is actually a complete change in the optical system, giving lighting results exactly the same as a complete new luminaire. Appreciation of the lighting improvement thus accomplished can be gained by comparing the vertical lighting curve of the open radial reflector type containing a 2,500-lumen lamp, with the curve of the converted luminaire, also with 2,500-lumen lamp, using lateral control. With the radial luminaire the light is mostly directed to the street surface immediately below the luminaire. Very little additional light concentration is obtained in the desired 70 degree to 75 degree zone. In fact, only about 18 percent more light is furnished by the radial reflector than without it. The light intensity from the reflector is substantially the same as from the bare lamp. For good visibility, we know that the intensity at that angle should be much less since this is the zone in which glare is a serious factor in reducing visibility.

With the enclosed luminaire, on the other hand, the concentration of light in the desired 70 degree to 75 degree zone is approximately six times the bare lamp value, thus providing a substantial uniformity for spacing from five to six times the mounting height. Examining this curve at 90 degree angle, there has been a reduction to approximately 13 percent of the bare lamp value. More important still, the lamp itself is shielded from view at these higher angles.

This conversion provides for the spreading of the light along the highway rather than concentrating it directly below the luminaire. The light thus provides good visibility.

When Johnny comes home to stay.....

GIVE HIM PLENTY OF BIG JOBS TO DO

RIGHT NOW, on the home front, it's up to city officials and leading engineers to do their part in planning new municipal water mains and other public works projects. It's one way to have steady employment ready for local men when their present job is finished.

By specifying Lock Joint Reinforced Concrete Pressure Pipe for water supply lines, sewerage and drainage, you can fulfill your promise to your own returning men. For, the Lock Joint Pipe Company is prepared to come to your town, set up a temporary plant and employ 90% of local labor. As most of the supplies and materials will be purchased locally, there will be a direct benefit to your town merchants. As a result, a large proportion of the cost of the project will be spent right in your own community.

For more than three decades Lock Joint Pipe has played a vital part in the majority of large diameter water pipe contracts in the United States. When Victory comes, we stand ready to help you give your engineers, mechanics, carpenters, laborers and other skilled workers the jobs they will need.

Whether your project is large or small, for the present or the future, your 'phone call, telegram, cable or letter to any of our offices will bring a prompt reply.

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SCOPE OF SERVICES *Lock Joint Pipe Company specializes in the manufacture and installation of Reinforced Concrete Pressure Pipe for Water Supply Mains as well as Concrete Pipe of all types for Sanitary Sewers, Storm Drains, Culverts and Subaqueous lines*

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Conventions—When and Where

*May 16-17—St. Louis, Mo.
Missouri Association of Municipal Utilities. Annual Convention. (Hotel DeSoto.) Sec.-Treas., W. J. McCarroll, Fulton, Mo.

May 17—Springfield, Mass.
New England Sewage Works Association. Spring Meeting. (Hotel Kimball.) Sec., L. W. Van Kleeck, Connecticut State Dept. of Health, State Office Bldg., Hartford, Conn.

May 18-19—Columbus, Ohio
American Water Works Association—Ohio Section. Annual Conference. (Hotels Ft. Hayes and Chittenden.) Sec., L. J. Hoffman, 101 Municipal Bldg., Akron, Ohio.

*May 18-19—Natchez, Miss.
Mississippi Municipal Association. Annual Convention. (Hotel Eola.) State Mgr., C. D. Ross, Old Merchants Bank Bldg., Jackson, Miss.

May 19-20—Baltimore, Md.
Maryland-Delaware Water and Sewerage Association. Annual Conference. (Hotel Lord Baltimore.) Sec., Miss E. V. Gipe, 2411 N. Charles St., Baltimore, Md.

May 19-21—Cleveland, Ohio
Community Chests and Councils, Inc. Annual Meeting. (Hotel Cleveland.) Exec., Dir., Ralph H. Blanchard, 155 E. 44th St., New York 17, N. Y.

May 21-27 Cleveland, Ohio
National Conference on Social Work. Annual Conference. (Public Auditorium.) Gen. Sec., Howard R. Knight, 82 N. High St., Columbus, Ohio.

May 22-23—Atlanta, Ga.
Association of County Commissioners of Georgia. Annual Convention. (Hotel Ansley.) Exec. Sec., Betty Peeler, P. O. Box 57, Decatur, Ill.

May 22-23—Chehalis, Wash.
Association of Washington Cities. Annual Convention. (Hotel St. Helens.) Sec., Paul F. Schiffner, Assistant Corporation Counsel, Spokane, Wash.

*May 22-23—Hershey, Penna.
Pennsylvania Water Works Operators Association. Annual Conference. (Community Building.) Sec., I. M. Glace, 22 South 22nd St., Harrisburg, Pa.

May 24-26—Portland, Oregon
League of Oregon Cities. Annual Convention. (Hotel Multnomah.) Exec. Sec., Herman Kehrli, University of Oregon, Eugene, Ore.

May 24-26—Harrisburg, Pa.
Pennsylvania State Association of Township Commissioners. Annual Convention. (Hotel Penn Harris.) Sec.-Treas., H. A. Fritschman, Upper Darby, Pa.

May 29-30—New York, N. Y.
National Association of Purchasing Agents—Governmental, Education and Institutional Group. Annual Convention. (Hotel Waldorf-Astoria.) Sec., Joseph W. Nicholson, City Purchasing Agent, Milwaukee, Wis.

*May 31-June 1—Chicago, Ill.
American Shore and Beach Preservation Association. Annual Meeting. (Palmer House.) Sec., Peter J. Gannon, 1060 Broad St., Newark 2, N. J.

*June 6-9—Detroit, Mich.
Smoke Prevention Association. Annual Meeting. (Hotel Statler.) Sec., Frank A. Chambers, 139 North Clark St., Chicago, Ill.

June 7-9—Cleveland, Ohio
Municipal Finance Officers' Association of the United States and Canada. Annual Meeting. (Hotel Cleveland.) Exec. Sec., Carl H. Chatters, 1313 E. 60th St., Chicago, Ill.

June 7-9—Syracuse, N. Y.
New York State Conference of Mayors and Other Municipal Officials. Annual Convention. (Hotel Syracuse.) Exec. Sec., William P. Capes, 6 Elk St., Albany, N. Y.

*June 9-10—Greeley, Colo.
Colorado Municipal League. Annual Meeting. (Hotel Canfield.) Sec., H. A. Storey, University of Colorado, Boulder, Colo.

*June 12-14—Minneapolis, Minn.
League of Minnesota Municipalities. Annual Meeting. (Hotel Nicollet.) Exec. Sec., C. C. Ludwig, University of Minnesota, Minneapolis, Minn.

June 12-16—Montreal, Quebec
Canadian Federation of Mayors and Municipalities. Annual Conference-Cruise. (SS St. Lawrence from Montreal.) Sec., Miss Jessica Allan, Mount Royal Hotel, Montreal, Quebec, Canada.

June 13-16—Boston, Mass.
Building Officials' Conference of America. Annual Meeting. (Hotel Statler.) Sec.-Treas., Arthur N. Rutherford, Building Inspector, West Hartford, Conn.

June 13-16—Milwaukee, Wis.
American Water Works Association. Annual Meeting. Sec., Harry E. Jordan, 500 Fifth Avenue, New York 18, N. Y.

June 14-16—St. Louis, Mo.
American Planning and Civic Association. Annual Conference. (Hotel Statler.) Exec. Sec., Harlean James, 901 Union Trust Bldg., Washington, D. C.

*June 15-17—Harrisburg, Pa.
Eastern Association of Fire Chiefs. Annual Meeting. (Hotel Penn Harris.) Sec., Charles E. Clark, Box 217, Wayne, Pa.

*June 16-17—Syracuse, N. Y.
New York State Sewage Works Association. Spring Meeting. (Hotel Syracuse.) A. S. Bedell, New York State Department of Health, Albany, N. Y.

June 18-24—Greensboro, N. C.
Southeastern Institute for Commercial Organization Executives. Annual Session. (The Woman's College of the University of North Carolina.) Mgr., L. P. Dickie, Chamber of Commerce Bldg., Atlanta, Ga.

*June 19-22—Pittsburgh, Pa.
The American Society of Mechanical Engineers. Semi-Annual Meeting. (Hotel William Penn.) Exec. Asst. Sec., Ernest Hartford, 29 W. 39th St., New York 18, N. Y.

*June 19-21—St. Paul, Minn.
National Association of Tax Administrators. Annual Meeting. (Hotel St. Paul.) Acting Exec. Sec., George H. Watson, 1313 E. 60th St., Chicago, Ill.

*June 19-21—Philadelphia, Pa.
Special Libraries Association. Annual Wartime Conference. (Hotel Benjamin Franklin.) Exec. Sec., Mrs. Kathleen B. Stebbins, 31 E. 10th St., New York 3, N. Y.

*June 21-22—Marion, Ohio
Ohio Conference on Sewage Treatment. Annual Conference. (Hotel Harding.) Sec., Don Heffelfinger, c/o Sewage Treatment Plant, Alliance, Ohio.

June 22-24—Philadelphia, Pa.
Pennsylvania State Association of Boroughs. Annual Convention. (Hotel Benjamin Franklin.) Pres. Thomas F. Chrostwaite, Hanover, Pa.

*June 22-25—Fresno, Calif.
California Sewage Works Association. Annual Convention. Pres., Richard Pomeroy, Pasadena, Calif.

*June 25-July 1—Eugene, Oregon
Western Institute for Commercial and Trade Executives. Annual Meeting. (Oregon State University.) Mgr., Wm. E. Hammond, 333 Pine St., San Francisco, Calif.

July 3-8—Pittsburgh, Pa.
National Education Association of the United States. Annual Business Meeting of the Representative Assembly. (Hotel William Penn.) Exec. Sec., Willard E. Givens, 1201 16th St., NW, Washington, D. C.

July 19-21—Cleveland, Ohio
American Society of Civil Engineers. Annual Convention. (Hotel Cleveland.) Sec., George T. Seabury, 33 West 39th St., New York 18, N. Y.

July 23-29—Missoula, Mont.
Rocky Mountain Institute for Commercial Organization Executives. Annual Session. (Hotel Florence.) Sec.-Treas., J. R. Pratt, 1445 Rand Tower, Minneapolis, Minn.

*July 23-29—Dallas, Texas
Southwestern Chamber of Commerce Institute. Annual Session. (Hotel Baker.) Mgr., D. Hodson Lewis, 300 Chamber of Commerce Bldg., Dallas 2, Texas.

July 24-25—Reading, Pa. (Correction)
Pennsylvania Chiefs of Police Association. War Conference. (Hotel Berkshire.) Sec., F. B. Titus, Lansdowne, Pa.

July 24-27—Syracuse, N. Y.
National Association of County Officials. Second War Conference. (Hotel Syracuse.) Sec.-Treas., George F. Simmons, Ogden, Utah.

*July 25-27—White Plains, N. Y.
New York State Association of Chiefs of Police. Annual Meeting. (Hotel Roger Smith.) Sec.-Treas., R. W. Morris, P. O. Box 346, Geneva, N. Y.

*July 31-Aug. 2—Williamsport, Pa.
Pennsylvania State Association of County Commissioners. Annual Convention. (Hotel Lycoming.) Sec., D. E. Schuler, Court House, Warren, Pa.

*Aug. 13-19—Evanston, Ill.
National Institute for Commercial and Trade Organization Executives. Annual Session. (Northwestern University.) Sec.-Treas., Clarence R. Miles, 38 S. Dearborn St., Chicago, Ill.

*Aug. 22-25—Grand Rapids, Mich.
International Association of Chiefs of Police. Annual Convention. (Hotel Pantlind.) Sec., Daniel B. Tierney, 8 Robbins Rd., Arlington, Mass.

*Sept. 1-2—Vernal, Utah
Municipal League of Utah. Annual Convention. Sec., Tom McCoy, Public Safety Bldg., Salt Lake City, Utah.

*Sept. 13-14—Pittsburgh, Pa.
American Water Works Association.—Western Pennsylvania Section. Annual Meeting. (Hotel Roosevelt.) Sec., E. P. Johnson, 418 Flannery Bldg.—Section 13, Pittsburgh 15, Pa.

*Sept. 17-20—Chicago, Ill.
American Cemetery Owners' Association. Annual Meeting. (Edgewater Beach Hotel.) Vice-Pres., Roy Hatten, 408 South Oak Park Ave., Oak Park, Ill.

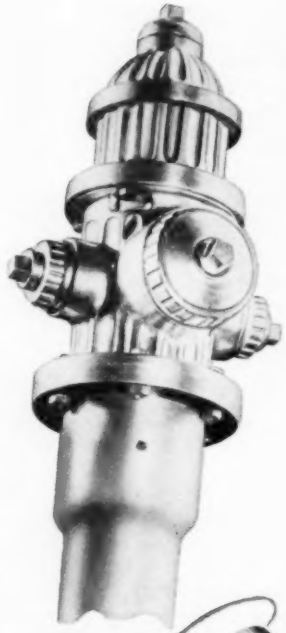
*Sept. 19-21—Mammoth Cave National Park, Ky.
Kentucky Municipal League. Annual Meeting. (Hotel Mammoth Cave.) Exec. Sec., Carl B. Wachs, c/o University of Kentucky, Lexington, Ky.

* First appearance of notice on this page.

GET IN THERE AND START PITCHING

Team-work on the part of local planning and governing bodies is NEEDED NOW. You'll be asked to go to bat, one of these days, to provide much-needed work for the boys when they return. Millions of dollars of deferred water and sewage works maintenance, rehabilitation, expansion, and other needed local public works must be in contract-form... READY FOR IMMEDIATE ACTION. Don't get caught off-base by red-tape delays that can be avoided with a little team-work now.

We join the Committee on Water and Sewage Works Development in urging you, for the welfare of your community and the Nation at large, to determine tomorrow's needs, and to BLUEPRINT NOW!



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Conventions

(Continued from page 115)

*Sept. 19-22—Poland Spring, Maine

NEW ENGLAND WATER WORKS ASSOCIATION. Annual Meeting. (Poland Spring House. Sec., Frank J. Gifford, 613 Statler Bldg., Boston, Mass.

*Sept. 21-22—Denver, Colo.

AMERICAN WATER WORKS ASSOCIATION—ROCKY MOUNTAIN SECTION. Annual Conference. (Hotel Cosmopolitan.) Sec., O. J. Ripple, Supt. of Filtration, Littleton, Ohio.

Sept. 24-27—St. Paul, Minn.

AMERICAN PUBLIC WORKS ASSOCIATION. Public Works Congress. (Hotel St. Paul.) Exec. Dir., Frederick Bass, 1313 E. 60th St., Chicago, Ill.

*Sept. 26-28—Lake Placid, N. Y.

MUNICIPAL ELECTRIC UTILITIES ASSOCIATION OF NEW YORK STATE. Annual Meeting. (Lake Placid Club.) Sec., T. J. McKee, 200-212 East Third St., Jamestown, N. Y.

*Oct. 2-4—Boston, Mass.

INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION, INC. Annual Meeting. (Hotel Statler.) Sec., Oliver F. Hawley, 8 East 41st St., New York 17, N. Y.

*Oct. 3-5—Des Moines, Iowa

NATIONAL ASSOCIATION OF ASSESSING OFFICERS. National Conference on Assessment Administration. (Hotel Ft. Des Moines.) Exec. Dir., Albert W. Noonan, 1313 E. 60th St., Chicago, Ill.

*Oct. 3-5—New York, N. Y.

AMERICAN PUBLIC HEALTH ASSOCIATION. Wartime Public Health Conference and Annual Business Meeting. (Hotel Pennsylvania.) Exec. Sec., Dr. Reginald W. Atwater, 1790 Broadway, New York, N. Y.

Oct. 12-14—Pittsburgh, Pa.

FEDERATION OF SEWAGE WORKS ASSOCIATIONS. Annual Meeting. (Hotel William Penn.) Sec., W. H. Wisely, 325-26 Illinois Bldg., Champaign, Ill.

Oct. 12-14—Pittsburgh, Pa.

PENNSYLVANIA SEWAGE WORKS ASSOCIATION. Annual Conference. (Hotel William Penn.) Sec.-Treas., Bernard S. Bush, c/o Dept. of Public Health, Kirby Health Center, Wilkes-Barre, Pa.

Oct. 12-17—Chicago, Ill.

INTERNATIONAL CITY MANAGERS' ASSOCIATION. Annual Conference. (Medinah Club.) Dir., Clarence E. Ridley, 1313 E. 60th St., Chicago, Ill.

Oct. 17-19—Austin, Texas

AMERICAN WATER WORKS ASSN.—SOUTHWEST SECTION. Annual Meeting. (Hotels Driskill and Stephen F. Austin.) Sec.-Treas., George J. Rohan, P. O. Dr. 449, Waco, Texas.

*Oct. 30-31—Pittsburgh, Pa.

ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA. Annual Water Conference. (Hotel William Penn.) Chairman, H. M. Olson, Hotel William Penn, Pittsburgh, Pa.

Building Code Requirements for Masonry

IN the interests of better design and construction of buildings, the American Standards Association has announced publication of the American Standard Building Code Requirements for Masonry. This standard deals with performance requirements as well as design and workmanship of masonry used in building, and covers in detail the materials commonly used in non-reinforced masonry. The code proper covers such subjects as classification of materials (sand-lime brick, concrete brick, cast stone, etc.), allowable stresses, lateral support, types of walls, piers, partitions, erection, etc.

This standard, developed under the technical leadership of the National Bureau of Standards, through the procedure of the American Standards Association, is one of a related series presenting recommended basic building code requirements. The objectives of the building code program and related information are described in a pamphlet, "Building Code Standardization," which may be obtained free from the American Standards Association, 29 West 39th Street, New York 18, N. Y.

City Manager Appointments

BERNAL B. ALLEN, manager of Norridgewock, Maine, since 1942 has been appointed first town manager of Skowhegan, Maine. Mr. Allen expects to retain the managership of New Portland.

R. E. BORLAND, secretary of a building and loan association and former city clerk, has been appointed borough manager of Blairsville, Pa.

MISS BEULAH GILLEN has succeeded Arnold A. Day as town manager of Blaine, Maine. She was clerk and treasurer of the town when it was under control of the state from 1938 to 1942.

JAMES A. GILRUTH, a retired U. S. Army Colonel, has been appointed city manager of Gainesville, Texas, succeeding R. P. Reagan who was seriously injured in an automobile accident a few months ago.

W. R. HALL, former city clerk, has been appointed acting manager of Milford, Del., for the balance of the year. He succeeds Charles E. Banning.

SEYMOUR JUSTEMA, former city manager of Grand Haven, Mich., from 1934 to 1943, has been appointed borough manager of West View, Pa.

WILLIAM SPIVEY of the Carolina Light and Power Company at Raleigh, has been appointed city manager of Tryon, N. C.

LLOYD S. BRADY, manager of Royal Oak Township, has replaced BRYON J. ROCKWOOD as city manager of Hazel Park, Mich.

LT. COL. ERHARD G. TESCHAN, who has been in the Carribean area for the past 26 months, has been appointed village manager of Shorewood, Wis.

ARLAND J. WING, for 13 years a member of the board of selectmen at Monmouth, has been appointed town manager of Norridgewock, Maine, to replace B. B. Allen.

GUY W. LARRABEE has succeeded L. E. Griggs as town manager of Hardwick, Vermont.

Progress in Maine

In March, 9 communities in Maine adopted the provisions of the state enabling act for council-manager government. These cities and their new managers are:

Dexter, Maine—L. W. O'CONNOR
Eagle Lake—WILLIAM FURLONG
Frenchville—JOHN C. MICHAUD
Fort Kent—GEORGE QUIGLEY
St. Agatha—SYLVIO MICHAUD
St. Francis—FRANK G. HARTT
Stockholm—MRS. AGNES BAXTER
Van Buren—ROBERT C. VIOLETTE
Wallagrass—ADRIAN JACQUES

CLARENCE E. RIDLEY
Director, International City Managers' Association

The Municipal Bond Market

Some sales of new issues as reported in April issues of *The Bond Buyer*:

Amount	Borrower and Purpose	Rate (%)	Term (Years)	Basis (%)
$100,000	Los Angeles, Cal., Water Works	4.50	1.67 Avg.	0.622
200,000	Wichita, Kan., Internal Improvement	1.0	5.33	0.897
200,000	New Rochelle, N. Y., Refunding	1.0	6.50 Avg.	0.976
200,000	Freeport, Ill., Water Revenue	3.50	12.25 Avg.	1.05
210,000	Wanseon, O., School District	1.50	10.75	1.29
160,000	Mississippi, Highway, First Series	3.25	4.50 Avg.	1.39
503,000	Detroit, Mich., General Obligation Refunding, Series F	3.25	7.0 Avg.	1.49
660,000	Tacoma, Wash., Light and Power Revenue of 1943. Series B. (Callable)	1.25	9.33-9.50 O.—A.	1.592
658,000	Columbia, Tenn., Electric System Revenue Refunding Series A	1.75	8.17 Avg.	1.602
126,000	Jacksonville, Ill., Water Revenue	3.25	11.50 Avg.	1.726
133,000	Athens, Tenn., Electric System Revenue Refunding, Series A	1.75	1/10 O.—A.	1.739
2,311,000	Baltimore, Md., Fourth Water Serial	3.50	32.0 Avg.	1.739
200,000	Chester Municipal Authority, Pa., Water Revenue	3.25	35-17 Avg.	2.198
250,000	New York, N. Y., Serial Bonds	3.0	20.25 Avg.	2.223
710,000	Golden Gate Bridge and Highway Dist., Cal., Bridge, Series C	3.75	23.0 Avg.	2.226
250,000	New York, N. Y., Corporate Stock	3.50	16.0	2.253
247,000	LaFollette, Tenn., Electric System Revenue Refunding, Series B	2.50	1/8 O.—A.	2.36

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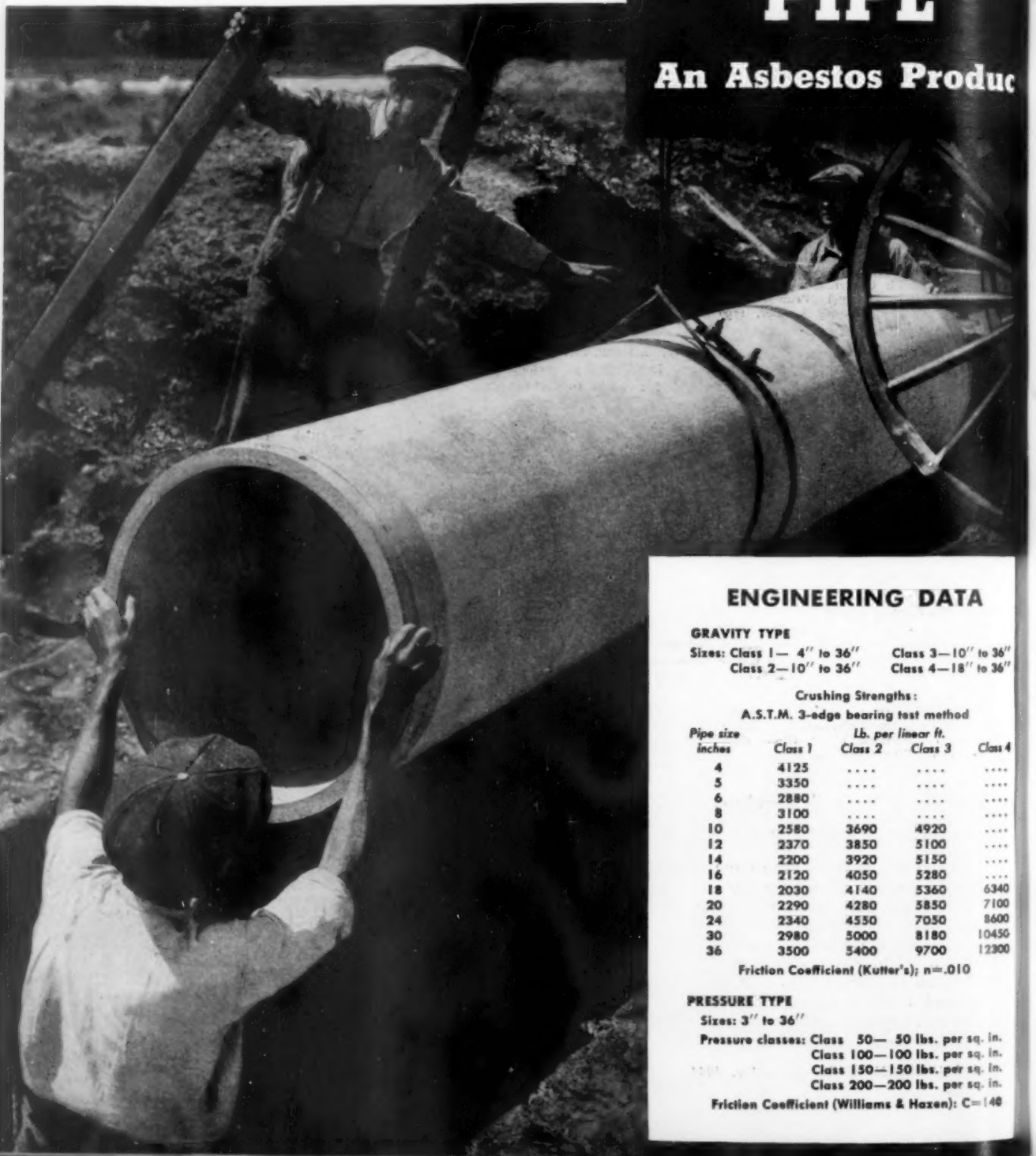

ENGINEERING DATA

GRAVITY TYPE

Sizes: Class 1— 4" to 36" Class 3—10" to 36"
Class 2—10" to 36" Class 4—18" to 36"

Crushing Strengths:
A.S.T.M. 3-edge bearing test method

Pipe size inches	Lb. per linear ft. Class 1	Class 2	Class 3	Class 4
4	4125	....	....	....
5	3350	....	....	....
6	2880	....	....	....
8	3100	....	....	....
10	2580	3690	4920	....
12	2370	3850	5100	....
14	2200	3920	5150	....
16	2120	4050	5280	....
18	2030	4140	5360	6340
20	2290	4280	5850	7100
24	2340	4550	7050	8600
30	2980	5000	8180	10450
36	3500	5400	9700	12300

Friction Coefficient (Kutter's): n=.010

PRESSURE TYPE

Sizes: 3" to 36"

Pressure classes: Class 50— 50 lbs. per sq. in.
Class 100—100 lbs. per sq. in.
Class 150—150 lbs. per sq. in.
Class 200—200 lbs. per sq. in.

Friction Coefficient (Williams & Hazen): C=140

Municipal and Civic Publications

Municipal Law Annual

MUNICIPALITIES AND THE LAW IN ACTION: 1944 EDITION.—*Edited by Charles S. Rhyne. National Institute of Municipal Law Officers, 730 Jackson Place, N.W., Washington 6, D. C. 551 pp.* $10.

This solid volume, compiled by the National Institute of Municipal Law Officers, an association of corporation counsel, city solicitors, and city attorneys, may almost be considered the municipal legal voice of the United States. Within its 551 pages, city attorneys may find precedents for handling legal problems met by other cities during the past year. From Airports to Zoning it covers some 350 types of legal experience.

The publication includes the complete papers presented by legal officials from all parts of the United States, from Hawaii, and Canada, in 10-minute summaries at the War Conference of the National Institute held in Chicago in December 1943, together with 64 pages of discussions stimulated by the reports. This volume, seventh in the series now issued annually, shows marked shifting in urgent civic questions from civilian defense in 1942 to post-war planning in 1943. Its pages also bring out the municipal actions in preventing control of municipal employees by WPB, a vital issue in 1943.

Among other subjects clarified by the conference and reported in the volume are: absentee voting by service men; municipal taxation of federal-owned land; Philadelphia income tax; zoning and planning in wartime; the war and public utilities; regulation of business; dog control; municipal action on enforcement of pleasure driving ban; control of social diseases; control of movements of people in war area in Canada; blighted areas in cities; post-war reserve funds. It is a kind of What's What in legal procedure for municipalities.

UAW-CIO Housing Proposals

MEMORANDUM ON POST-WAR URBAN HOUSING.—*Prepared under the direction and supervision of R. J. Thomas, International President of the UAW-CIO; Chairman, National CIO Housing Committee, and Chairman, UAW-CIO Post-War Planning Committee. Distributed by Education Department, UAW-CIO, 1324 Maccabees Bldg., Detroit 2, Mich. Pub. No. 37. 1944. 121 pp. 25c; 25 for* $5; *100 for* $20.

One of the few publications brought out so far to deal with the balanced relationship of economic, social, and political problems inherent in adequate urban housing. Calls for a new conception of civic organization and advises creating a Metropolitan Regional Planning Board for each city, charged with making a master plan before proceeding with any program of slum clearance. While avoiding patchwork efforts, such a plan would counteract the twin processes of unplanned growth and urban decentralization which have resulted in decline of tax returns from slum areas, in increasing city services, and higher taxes for all.

The plan advanced is based on giving all possible aid and encouragement to private enterprise in meeting the nation's housing needs and providing full employment, this assistance contingent on safeguarding maximum public benefit. Recommends substantial reduction in home building mortgage interest rates consistant with the physical and economic soundness of the housing concerned, and longer periods of mortgage amortization for housing developed in planned communities.

The report recognizes the necessity for public assistance in the acquisition and assembly of suitable land, with the corresponding obligation on the part of private enterprise to use it in the public interest. Points out the necessity to guard against repetition of speculation in land and building that followed the last war, but advocates a strong constructive program, not a negative restrictive one.

It holds that government should use housing as part of its insurance against critical unemployment after the war, assuming responsibility for housing groups below the economic level profitable for private enterprise. Recommends establishing minimum standard of housing comparable to minimum standards of education accepted by public without respect to ability to pay.

Residential Land Use

MASTER PLAN OF RESIDENTIAL LAND USE OF CHICAGO.—*The Chicago Plan Commission. Chicago, Ill. 1943. 134 pp. 20 N. Wacker Drive, Chicago, Ill.* $3.

In this report, developed with Chicago as a testing ground, Homer Hoyt and his staff devised a method for dissecting cities, thereby simplifying the problem of analysis and synthesis of residential areas inherent in planning for post-war improvement of our cities. The entire city of Chicago was analyzed for residential characteristics on the basis of five main categories—blighted, near-blighted, conservation, stable, and new growth areas; and three lesser categories—arrested, progressive development, and vacant areas. With these findings, a plan of rebuilding in an orderly sequence according to life-expectancy and place in the city pattern may be formulated.

The volume has over 100 illustrations which show how every type of residential neighborhood in Chicago evolved historically and how the oldest sections have reached an advanced state of decay. Some areas are ripe for demolition and should be rebuilt within the generation following the war; some can last another generation with careful maintenance; others at the height of their development will become obsolete within a generation; while still others recently built or not yet constructed will last for generations. The primary task is, therefore, to set up a time-sequence for treating residential areas based on their individual characteristics and place in the city plan. A series of transparent overlays shows in succession the residential, industrial, park, railroad, highway, street car and commercial patterns. Each organic urban system is printed separately but when superimposed on top of each other, they fit together to form the complete urban body.

In the closing section of the report, a plan is submitted for housing the entire expected population of Chicago within the city limits in modern site layouts with ample light, air, and play space. Numerous colored maps aid in the diagnosis of the city for planning purposes. The information included in this survey is an essential contribution to the basic material being assembled by the Chicago Plan Commision in its preparation of a Master Plan for the city's rehabilitation. Two earlier reports on Land Use were reviewed in THE AMERICAN CITY of October, 1942, and March, 1944.

Planned Redevelopment Without Subsidy

A SYSTEM FOR PLANNED REDEVELOPMENT WITHOUT SUBSIDY.—*By Alfred Rheinstein. New York Building Congress, Inc., 101 Park Ave., New York 17, N. Y., 1944. 15 pp.*

The plan proposes the redevelopment of large obsolete urban areas acquired by the city through its power of eminent domain and resold in small sections or groups of small sections to the highest bidder for redevelopment after the neighborhood has been planned as a unit and restricted accordingly.

The designing group would, after prequalifying, be chosen in competition. The winning scheme must be comprehensive and supported by complete data to prove its fiscal side as sound in detail as are its physical features.

The proposed system, unlike others, needs no subsidies from the government, pays full taxes from the time the project is first undertaken. The system depends upon acquiring many of its advantages and economies for residents and business by making available to private buildings the light above and around public works, by substituting small publicly owned parks for private courts and yards, by providing tributaries to highways for off street loading and by other similar means of pooling common features with better results and on a larger scale than the individual could afford for his exclusive use.

This results from the neighborhood being planned as a whole in contrast to the planning of single plots by different interests. The Mayor would appoint the judge and the Planning Commission would have general jurisdiction.

The program would call for city aid in passing enabling legislation, but no subsidy is asked. Indeed the author claims that "the absence of subsidy affords private enterprise an independence and leadership not possible under the controls inherent in government subsidy. It uses the powers and position of Government to acquire land and place restrictions, to define objectives and establish opportunities, but it relies for performance upon free enterprise in competition." The author further calls attention to the tax advantage that would follow such a program.

Urban Neighborhoods

PLANNED NEIGHBORHOODS.—*The Architectural Forum. April 1944. 19 W. 44th St., New York. Special section of 81 pp.* $1 *for the issue.*

An impressive study of planned neighborhoods presented as a series of authoritative articles, illustrated by photographs and line drawings, covering the following subjects: Small Rural Development, Boston, Mass.; Objectives of Neighborhood Planning; Suburban Rental Housing, New York City; Prerequisites of Planned Development; Rural Activities Center, Tennessee Valley Pros and Cons of the Planning Process; Financing Urban Development; Desert Housing Project, Tucson, Ariz.; Planning for Private Investment; Riverfront Reconstruction, St. Louis, Mo.; Conservation of Neighborhoods; Waterfront Development, Portland, Ore.; Uniform Neighborhood Boundaries; Residential Development, Burlington, Vt.; An Organized Theory of City Planning; Recreation Center for Kansas City, Ka.; A Plan for Harlem's Redevelopment.

In the introductory comments on the series the editor says: "Replanning the city on a neighborhood or sub-community level is not only realistic; it is the only scheme yet advanced which holds out any hope of regaining *a human scale* without losing the manifold virtues of the urban environment. . . . Our cities and our countryside, come hell or high water, are going to be replanned and rebuilt." An earlier study of the same subject was brought out by *The Architectural Forum* in the issue of October 1943.

Democracy in Action

TVA-DEMOCRACY ON THE MARCH.—*By Davis E. Lilienthal. Harper & Brothers. New York. xiv + 248 pp.* $2.50.

A convincing account of a regional achievement that shows how a government-inspired project may vastly increase the amount of free enterprise and prolong it far into the future. In this account by the Chairman of TVA one sees how true economic democracy can be instituted, with the people participating in decisions which affect their daily bread on the farms, in the small towns, and in the cities. The developing and use of resources—land, forests, minerals, and water—has been made the people's job and the technique of doing this job in the democratic way is herein explained. The author is convinced that in tested principles of democracy we have ready at hand a philosophy and a set of working tools that,

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The HOUSING MARKET in NEW YORK CITY

By Herbert S. Swan
Written for the Institute of Public Administration, New York

A thorough, factual, and realistic study of the market for both rental and individually-owned housing in New York City. It is "full of meat" for everyone who is concerned with the reclaiming of real estate values in the residential areas of American cities. While it deals particularly with New York, its analysis of the problems can be applied profitably to the situation in which all large cities find themselves today. It is one of the most important documents of its kind that have been published in recent years and represents the findings of a long and serious study. $2.00

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adapted to this machine age, can guide and sustain us in increasing opportunity for individual freedom and well-being." In ten years of experience, he says, the people and their institutions have revealed the promise and hope of tomorrow for men everywhere. His statement of faith is confirmed by facts and reasons which make this important book one of the most eloquent pleas for regional planning to come out so far.

Canadian Progressives

CANADIAN PROGRESSIVES ON THE MARCH, THE STORY OF THE RISE OF THE C.C.F.—*By M. J. Coldwell, M.P., League for Industrial Democracy, 112 E. 19th St., New York 3, N. Y. March* 1944. 32 *pp.* 15c.

M. J. Coldwell, M.P., President of the Co-operative Commonwealth Federation of Canada, outlines the origin, development, and goals of the farm-labor party in Canada. Included is the Regina Manifesto of 1933 advocating the establishment of a planned socialized economic order, and the Postwar Program of the C.C.F. This party, favored by 30 percent of all Canadians, now is the Chief Opposition party in Ontario; its program calls for socialization of banking, insurance, transportation, communications, and electric power, security of tenure for farmers, public organized medical services, and a foreign policy of international economic cooperation.

Dallas Plans

YOUR DALLAS OF TOMORROW.—*Prepared by Harland Bartholomew and Associates for the City Plan Commission of Dallas, Texas,* 317 *North* 11*th St., St. Louis, Mo. September,* 1943. 51 *pp.*

The first part of this report contains a discussion of the character of the existing city; the second part entitled "Scope of the City Plan" shows how planning can correct present deficiencies and direct new growth properly. The major proposals include improvements in the water supply and sanitation systems, air and railroad transportation, parks, and public buildings. An extensive housing program calls for the establishment of a minimum standard housing ordinance and the division of residential areas into well-defined neighborhoods.

War and American Institutions

AMERICAN SOCIETY IN WARTIME.—*Edited by William F. Ogburn. The University of Chicago Press, Chicago.* 1944. 137 *pp.*, $2.50.

One of the "Walgreen Studies in Democracy," dealing with the effects of the present conflict thus far upon some of the most important institutions within the United States. The volume includes eleven lectures delivered by specialists in various fields under the aegis of the Walgreen Foundation for the Study of American Institutions, University of Chicago. It summarizes the impact of the war with resultant changes on such fields as population, the family, the American town, the urban community, farm and farming communities, social science and the soldier, the role of the citizen, the Japanese-American, racial ideologies, crime, and morale—with some emphasis on integrating factors at work in community life.

Mississippi's Problems Examined

MISSISSIPPI POPULATION TRENDS AND THEIR IMPLICATION.—*By Dr. J. V. Van Sickle. Mississippi Board of Development, Jackson, Miss.* 1943. *Mimeo.* 115 *pp.*

An important WPA study of the economic and cultural problems of Mississippi, dealing with population trends, conservation, and diversification, with special reference to increased per capita output through soil conservation and soil building processes. The survey was made to help the people of Mississippi and their chosen representatives to plan more intelligently for the future of the state, and is predicated on a policy of comprehensive planning, not piecemeal reforms.

Juvenile Delinquency

ECONOMIC FACTORS IN MICHIGAN DELINQUENCY. —*By Paul Wiers. Edited by William N. Fuson, University of Michigan. Columbia University Press, New York.* 1944. 55 *pp. paper.* $1.

A study that provides a state-wide statistical picture of the economic backgrounds of juvenile delinquency in the United States and clears up many over-simplified popular misconceptions. Deals with both rural and urbanized areas. The author seeks to determine the relationships between the delinquency rate and such variables as percentage of urban area, home ownership, parental neglect, percentage of church members, and incidence of adult crime. He applies careful statistical methods to an analysis of the recorded juvenile delinquency cases reported by the courts in Michigan counties from 1927-28 and 1931-32. An important conclusion reached by Mr. Wiers is that parental inefficiency and neglect, more than poverty, divorce, or racial and cultural conflict, are the fundamental determining factors in delinquency.

Boston Metropolitan Census

COMPARATIVE STATUS OF 83 CITIES OF TOWNS IN THE BOSTON METROPOLITAN CENSUS DISTRICT.—*Bureau for Research in Municipal Government, Harvard Graduate School of Public Administration. Cambridge, Mass. No.* 10. *December* 1943. 31 *pp.*

Tabulates the relative status of the 83 cities and towns in the Boston Metropolitan Census District with respect to population density, local assessed property valuations, local tax rates, and local direct tax per capita. Covers the period from 1930 to 1943 and furnishes carefully compiled tables and charts.

Grade Crossing Elimination

REPORT TO THE CITY COUNCIL ON RAILROAD GRADE-CROSSING ELIMINATION.—*Niagara Falls Planning Board, Niagara Falls, N. Y., January,* 1944. 6 *pp.*

Studies the undesirable grade crossing situation within Niagara Falls created by six trunk line railroads. Track elevation and depression or relocation and terminal unification are proposed as remedial measures. Includes a table of grade crossing accidents that occurred in the ten year period from 1932-42 and estimates the comparative cost of the two corrective programs. Amply supplied with maps.

Water Conservation in West Virginia

WATER CONSERVATION PLANS FOR WEST FORK RIVER BASIN.—*Clarksburg Water Board, Clarksburg, W. Va.,* 1944. 25 *pp.*

A brochure containing a thorough and convincing appeal for the development of a 25-billion gallon water supply in the West Fork River and Elk Creek Basins above Elkhart, W. Va. The brochure is based on a paper delivered by Scotland G. Highland, Secretary and General Manager for the Water Board, and is reinforced by figures from many authorities whose problems are similar to those presented by Mr. Highland.

Plans for Minnesota's Post-War Role

POSSIBLE ROLE OF THE STATE OF MINNESOTA IN POST-WAR PUBLIC WORKS PROGRAM AND AN ANALYSIS OF STATE FISCAL OPERATIONS—*Minneapolis Institute of Government Research, Inc., E-613 First National Bank Bldg., St. Paul, Minn. State Governmental Research Bulletin No.* 15. *March,* 1944. 30 *pp.* 25c.

Background material for planning the role of the State of Minnesota in the post-war public work period. Reviews carefully the ten year trend in revenue, expenditures, borrowing policy, and the present financial condition of the State treasury; numerous charts and tables supplied.

Government in Rural New Hampshire

STUDIES IN LOCAL GOVERNMENT AND TAXATION IN RURAL NEW HAMPSHIRE. *By Harold C. Grinnell. Bulletin* 346. *Agricultural Experiment Station, University of New Hampshire, Durham, N. H. June* 1943. 157 *pp.* A systematized study of the general organization and administration of government in rural New Hampshire, together with an investigation of its fiscal system and an analysis of state-local relationships.

Bibliography: Government Administration

YOUR BUSINESS OF GOVERNMENT, A CATALOG OF PUBLICATIONS IN THE FIELD OF PUBLIC ADMINISTRATION.—*Prepared by the Public Administration Service,* 1313 *E.* 60*th St., Chicago,* 37, *Ill.* 1944. 30 *pp.*

Lists PAS publications series as well as publications of its associated organizations, including the American Public Welfare Association, Civil Service Assembly, International City Managers' Association, and Public Administration Clearing House.

Other Reports Received

LYNCHBURG, VA.—Annual Report of the City Manager for the fiscal year ending December 31, 1943. 51 pp.

ROANOKE, VA.—Annual Report of the City Auditor for the fiscal year ending December 31, 1943. 64 pp.

PASADENA, CALIF.—Annual Report of the City Manager for the fiscal year ending June 30, 1943. 65 pp.

NEW KENSINGTON, PA.—Tenth Annual Report of the City Controller for the fiscal year ending December 31, 1943. 31 pp.

WINCHESTER, MASS.—Annual Report of the Water and Sewer Board, Town of Winchester, Mass., for the fiscal year ending December 31, 1943. 11 pp.

KENTVILLE, N. S.—Proceedings of the 58th Annual Convention of the Union of Nova Scotia Municipalities. Kentville, County of Kings, N. S., August 31-September 2, 1943. 130 pp.

LEXINGTON, KY.—Audit Report for 1943 and Proposed Budget for 1944. 86 pp.

ERIE, PA.—Proposed Budget for the year 1944. 58 pp.

FREDERICKSBURG, VA.—Annual Report of the City Manager for the fiscal year ending December 31, 1943. 75 pp.

ERIE, PA.—Annual Report of the Director of the Department of Accounts and Finance for the fiscal year ending January 3, 1944. 84 pp.

NEW ORLEANS, LA.—First Annual Report of the Department of City Civil Service for the fiscal year ending December 31, 1943. Mimeo, 27 pp.

WILMINGTON, MASS.—Annual Report of the Town Officers for the fiscal year ending December 31, 1943. 142 pp.

TORONTO, CANADA.—Annual Report of the Assessment Commissioner for the fiscal year ending December 31, 1943. 41 pp.

CORONADO, CALIF.—Annual Report of the City Manager for the fiscal year ending December 31, 1943. 23 pp.

WINCHESTER, MASS.—29th Annual Report of the Planning Board including Six-Year Public Works Program, 1943. 18 pp.

SAINT LOUIS, MISSOURI.—Annual Report of the City Plan Commission for the fiscal year ending April 12, 1943. 32 pp.

LARCHMONT, N. Y.—Annual Report of the Board of Trustees for the fiscal year ending February 29, 1944. 15 pp.

HARTFORD, CONN.—Fourth Annual Report of the Housing Authority of the City of Hartford, June 30, 1943. 20 pp.

PUERTO RICO.—Preliminary Six-Year Financial Program of the Puerto Rico Planning, Urbanizing, and Zoning Board, December 15, 1943. 36 pp.

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A chemical method of making soil waterproof has been developed by Hercules Powder Co., Wilmington, Del., and has been proved by actual use on roads, airplane landing fields, and other construction projects here and abroad, it was announced recently.

This chemical, given the trade name of Stabinol, can be used to stabilize unsurfaced dirt streets where the traffic is light, or it can be mixed with soil that serves as the base on main arteries with hard wearing surfaces.

By mixing Stabinol, a resin compound, with the top few inches of soil, a waterproof surface is obtained. The water will drain off or evaporate, rather than seep through the treated soil and turn it into mud. Company investigators report that Stabinol-treated soil resists penetration of surface water and also the capillary rise of moisture from below.

Only fractional amounts of Stabinol are required, usually about one percent of the total soil to be treated, and the "stabilized" soil has the same appearance as the original dirt. Hercules said that Stabinol does not increase the load-bearing capacity of soil, but it will prevent the soil from getting wet and losing its strength.

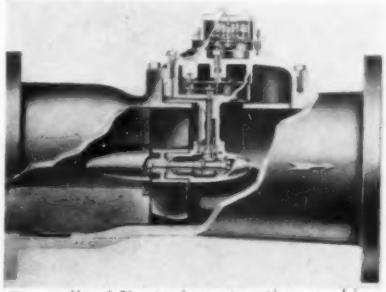
Hercules explained in its announcement that this effect of soil stabilization will last for years. Roads laid down more than five years ago, for example, are still waterproofed.

Propeller-Type Flow Meter by Builders-Providence

Builders-Providence, Inc., 9 Codding St., Providence, R. I., division of Builders Iron Foundry has just announced a new propeller-type flow meter for main line metering with many improvements including streamline Venturi construction. This unit, called a Propeloflo Meter, has an 8-blade bakelite propeller moulded in one piece. Rotation is transmitted through spur and bevel gears. Shafts rotating in ball bearings assure maximum power to drive indicating and recording devices or proportioning chemical feeds. A Venturi throat evenly distributes the force of the flow against the full area of the propeller, resulting in improved accuracy throughout an exceptionally wide range of flow. Spiral flow is eliminated by straightening vanes just upstream of the propeller.

The propeller hub, bracket and nose are streamlined to reduce flow disturbance and divert fine grit, sand or scale away from the mechanism. Engineers will find the unit easy to service, the manufacturer states, owing to its "one-shot" lubrication system, the readily accessible stuffing box, and the ease with which the propeller mechanism may be removed from the line for inspection. A blank cover may be installed when the meter is removed. Wherever debris or heavy foreign material may be carried along the line with the moving fluid, Builders recommends and can furnish a section of pipe having a coarse screen and hand hole, to be inserted upstream from meter.

The Propeloflo Meter, Model PRF, Builders officials assert, is a precision-made instrument providing, at low price, wide range, accuracy and low pressure loss in the measurement of liquid flow in lines 6 inches and larger.



Streamlined Venturi construction combines with propeller-type metering to make Builders-Providence new Propeloflo Meter.

Thomas R. Camp Opens Consulting Office

Thomas R. Camp, well known sanitary engineer, announces his resignation from the faculty of the Massachusetts Institute of Technology to open offices for full-time practice as a consulting engineer. Mr. Camp will be located in the Statler Office Building in Boston, and will specialize in water works, sewage works, municipal and industrial wastes, stream sanitation and flood control.

Thomas R. Camp

Mr. Camp has had about 25 years' experience in hydraulic and sanitary engineering and has been in charge of sanitary engineering at M.I.T. for the past 15 years. His practice includes an association with the late John B. Hawley in Texas, with the firm of Spoon, Lewis and Camp in North Carolina, and the late Alexander Potter in New York and New Jersey. He is the author of many scientific and technical papers and discussions including three sections in Davis' "Handbook of Applied Hydraulics," and active in research and developmental work. He holds five patents in the field of water and sewage treatment.

New Chairman Selected for Bailey Meter Co.

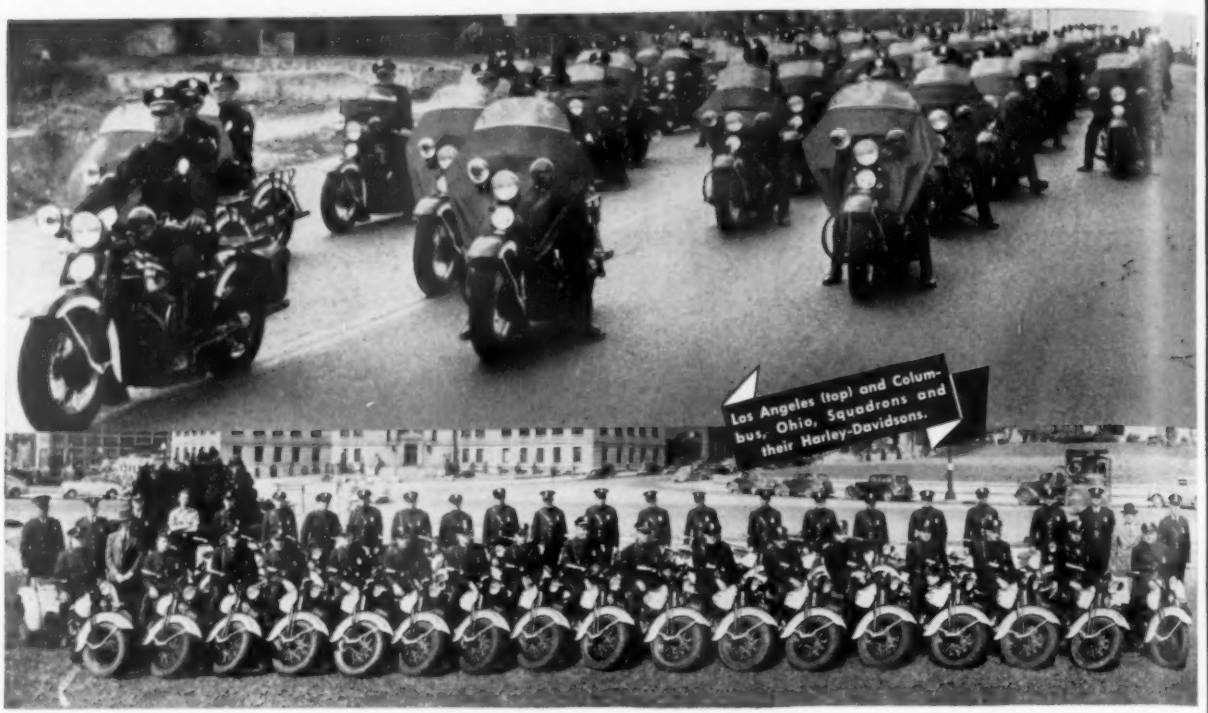
At a recent organization meeting of the directors of the Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio, E. G. Bailey, former President, was elected Chairman of the company. Mr. Robert S. Coffin succeeds him as President.

E. G. Bailey organized the company in 1916 to serve power plants and process industries with engineered instrumentation. A Steam Flow-Air Flow Boiler Meter which makes possible efficient boiler operation was one of the earliest products of the company. This company's present line of products includes meters and controls for both stationary and marine power plants, water supply, and sewage treatment plants. A new product is a contour control for the automatic operation of machine tools.

The new President, Mr. Coffin, had been Vice-President since 1925. He joined the company as Treasurer when it was organized.

Other officers elected at this meeting are: R. E. Woolley, Vice-President, and J. H. Black, Secretary-Treasurer.

THEIR CITIES FIND THEM INDISPENSABLE!



Many of America's greatest cities have found Harley-Davidsons indispensable in police work — proved by performance records. As cities become larger, the more vital it is to have motorcycle squads sufficiently large to meet all the complex problems of big city traffic control and law enforcement. Officials of these cities know that men and motorcycles can handle certain phases of police work quicker, better and more thoroughly than by any other method.

Through years of dependable, economical performance — for cities of every size, and for many state organizations — Harley-Davidson Motorcycles have proved their effectiveness in enabling police departments to

Cover more territory
Concentrate quickly at scenes of trouble
Provide better protection for vital industries
Maintain closer contact with the public
Command respect through evidence of uniformed authority.

It will pay you to keep these points in mind when developing your department for the busy years ahead.

HARLEY-DAVIDSON MOTOR CO., Milwaukee 1, Wisconsin

Harley-Davidson Motorcycles are available now for vital police needs. See your dealer.

HARLEY-DAVIDSON

Police Motorcycles

★ ON AMERICA'S FRONT LINES OF ACTION ★

Pictured above is a scene from the movie, "The Fighting Seabees," showing an Allis-Chalmers HD-14 Tractor and Buckeye Bulldozen as a tank being used for an advance on the Japs. This picture has been produced by Republic Pictures as a tribute to the important work being performed by the Seabees and their construction equipment in the war. Co-starred in the picture are Allis-Chalmers tractors, Buckeye, Baker and Gar Wood bulldozers, and other well-known shovels, scrapers, mixers and construction equipment.

Army-Navy "E" to Construction Machinery

On April 7, 1944, the employees and management of the Construction Machinery Co., Waterloo, Iowa, received word from the Honorable James Forrestal, Under Secretary of the Navy, that they had been awarded the Army-Navy "E" for excellence in production of war materials.

The presentation ceremonies took place at Waterloo on May 10.

AWWA Conference Exhibitors

Keen interest in the forthcoming annual conference of the American Water Works Association, to be held in Milwaukee Auditorium, Milwaukee, Wis., June 13-16, may be evidenced by the reservations manufacturers have made for exhibition booths. A complete list recently released by Arthur T. Clark, Sec.-Treas., Water and Sewage Works Manufacturers Association, Inc., of these exhibitors who have reserved space is as follows:

Allis-Chalmers Mfg. Co.
American Cast Iron Pipe Co.
THE AMERICAN CITY
American Smelting & Refining Co.
The American Well Works
The Atlas Mineral Products Co.
Badger Meter Mfg. Co.
The Barrett Div., Allied Chem. & Dye Corp.
Birch Manufacturing Co.
Brisbane & Co.
Buffalo Meter Co.
The Central Foundry Co.
Centriline Corporation
Chain Belt Co.
Clayton Manufacturing Co.
Darco Corp.
Darling Valve & Mfg. Co.
DeLaval Steam Turbine Co.
The Dorr Co., Inc.
Electro Rust-Proofing Corp.
Engineering News-Record
S. F. Ferguson
Flexible Underground Pipe Cleaning Co.
The Ford Meter Box Co., Inc.
The Foxboro Co.
General Paint Corp.
The Fred W. Hanks Co.
Hays Manufacturing Co.
Hersey Manufacturing Co.
Industrial Chemical Sales Div., W. Va. Pulp & Paper Co.
Infilco, Inc.
Johns-Manville
Lead Industries Assn.
Lock Joint Pipe Co.
A. Y. McDonald Mfg. Co.
McWane Cast Iron Pipe Co.
M & H Valve & Fittings Co.
National Water Main Cleaning Co.
Neptune Meter Co.
The Permutit Co.
The Pitometer Co.
Pittsburgh Equitable Meter Co.
Joseph G. Pollard Co., Inc.
%Proportioneers, Inc.%
Public Works Magazine
Ross Valve Mfg. Co., Inc.
Simplex Valve & Meter Co.
The A. P. Smith Mfg. Co.
S. Morgan Smith Co.
Thomson Meter Corp.
U. S. Pipe & Foundry Co.
Wallace & Tiernan Co., Inc.
Water Works Engineering
Water Works & Sewerage
R. D. Wood Company
Worthington-Gamon Meter Co.
Worthington Pump & Machinery Corp.

Mack Sales Appointments

F. F. Staniford, President of Mack Mfg. Corp., Fire Engine Div., Empire State Bldg., New York, has announced the following appointments:

E. F. Vreeland has been named manager of the Albany branch; M. J. Chollet is District Manager of the St. Louis, Mo. branch; C. L. McLure heads the Louisville, Ky., branch; and C. T. Bass has taken over duties as Division Bus Manager of the Central Division.

★FLAGS★

IMMEDIATE DELIVERY
ON
World-Famous Brands of Longest-Wearing U. S. Outdoor Flags
★
Write for flag price list No. FAC.
★
MUNICIPAL & COMMUNITY
HONOR ROLLS
Largest variety of designs to perfectly display from one name to thousands.
★
Write for illustrated price list No. AC.

AMERICAN FLAG & BANNER CO.
127 N. Dearborn St. • Chicago 2 Ill.

PREVENT RUSTING

Like hundreds of others, your steel tanks too can get lasting protection against rusting with Rusta Restor. Not a "Magic,"—but the proven cathodic (i.e., electrical) method, Rusta Restor maintains the tank in an "electro-negative" state, which not only prevents rusting, but gradually removes the effect of any earlier rusting. Rusta Restor is modest in first cost,—and uses the current required by only one light bulb,—at safe, low voltages. Each installation engineered to the individual tank and water conditions using proven mathematical formulas developed and used only by our engineers. Detailed description of interest to engineers and operating men sent on request. Write today.

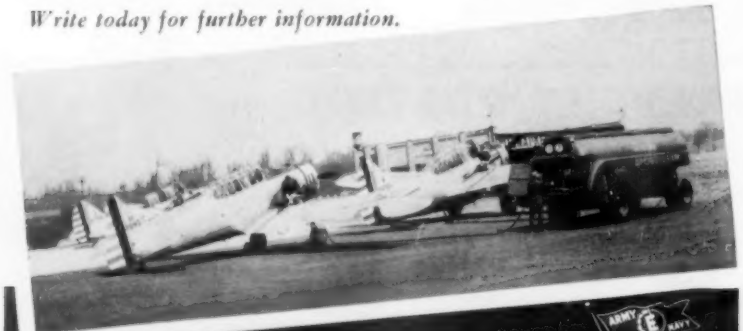
RUSTA RESTOR
Division of
THE JOHNSTON & JENNINGS CO.
861 Addison Road Cleveland 14, Ohio

On REFUELERS for Airports...

Heil's versatile engineering and production facilities assure you of a successful solution of post-war aircraft-refueling problems

World-wide experience with practically every type of refueling equipment which has ever been built — dating back to the pioneering days of aviation — has given the Heil organization a wealth of background which is available to you. All persons who are directly interested in the facilities of municipal airports are invited to collaborate in the development of specialized refueling equipment to meet their specific needs. T-92B

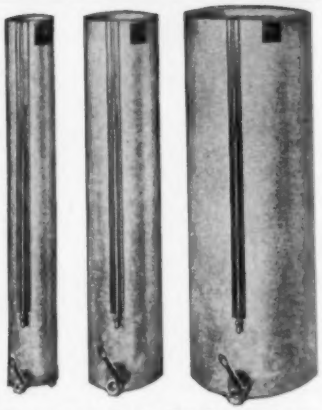
Write today for further information.



THE HEIL CO.

GENERAL OFFICES • MILWAUKEE 1, WISCONSIN

CALIBRATED TANKS



For water meter testing these tanks are accurate, durable and dependable. Made in 5 sizes, calibrated in gallons and cubic feet, also in percentages fast and slow. These tanks are made of heavily galvanized steel, have quick opening drain valves and brass gauge strips.

Write for catalog.

FORD Meter Box Co.

WABASH, INDIANA

SEWAGE TREATMENT PLANTS

Send for Bullletin 120 on

Spiraflo Clarifiers

and

Aero-filter Bulletin 112

Low operating cost.

Low initial cost.

»»●««

WATER TREATMENT PLANTS

Send for Bulletin 36

»»●««

LAKESIDE ENGINEERING CORPORATION

222 W. Adams St.

CHICAGO 6 ILLINOIS

New Appointment for Spalding at Superior Engine

John D. Spalding has been named Works Manager of the Superior Engine Division plant of The National Supply Company at Springfield, Ohio.

John D. Spalding

Mr. Spalding has been associated with the organization since 1923 when he joined as Plant Engineer at Carnegie, Pa. Successively he has been Assistant District Engineer of the Toledo plant, Patent Engineer at the Torrance, Calif., plant, and Assistant to the Vice-President and Works Manager at Torrance.

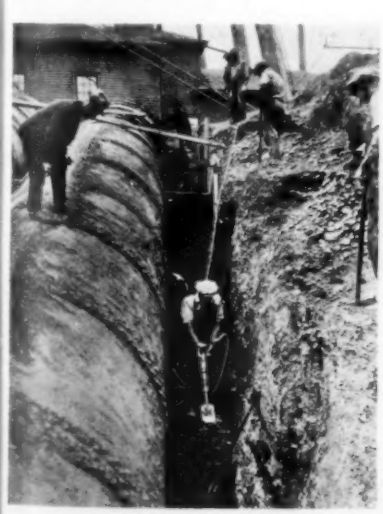
Fast Clay Digging With Compressed Air

The need of municipalities for proper repair and maintenance of sub-surface pipe may be aided greatly by the use of the compressed air clay digger.

The Compressed Air Institute, 2511 Terminal Tower, Cleveland 13, Ohio, states that in addition to its use in loosening gravel and other material, the pneumatic digger can be used for cutting clay, hard pan, and frozen ground for trenching and removal or repair of all kinds of underground pipe in water and sewer lines.

Various types of spades, chisels, and flat picks are suitable to the operation of the digger, and when it is equipped with hard steel points, it can be used on light and medium demolition work.

The pneumatic digger has a piston stroke ranging from 2½ inches to 4 inches and weighs from 19 to 25 pounds.



Air-operated clay digger evacuating clay around a penstock at a hydro-electric station.

Let us help you with that *NEW PROJECT...*

A call to our engineers involves no obligation!

YOU will save trouble and possibly future expense if you include fence in your original plans for postwar projects. Almost every public project needs the protection of good, sturdy fence.

Schools and playgrounds, of course, need fence to protect children from traffic. *Swimming Pools, Parks, Stadiums* need fence to control admissions. *Power Plants, Water Works* need fence to safeguard valuable property.

You are welcome to the service of our engineers. They'll be glad to help plan the fencing, gates, window guards, etc., and advise the type best suited for each requirement. These trained men have their own experience to call upon, plus the knowledge gained by Cyclone in more than 50 years' leadership in the fence industry. They will make careful recommendations that involve no obligation on your part. So, why not get in touch with us now?

SEND FOR FREE 32-PAGE BOOK

In the meantime, mail the coupon for our 32-page book on fence. Full of facts and specifications. Profusely illustrated. Complete information on different types of fence, gates, athletic field equipment, etc. Whether your plans are to be carried out now or in the future, you need this free book.

CYCLONE FENCE DIVISION (AMERICAN STEEL & WIRE COMPANY)
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United States Steel Export Company, New York

UNITED STATES STEEL

CYCLONE FENCE

Cyclone Fence
Waukegan, Ill., DEPT. B54

Please send me, free of charge, your 32-page book on Fence.

Name.....

Address.....

City..... State.....

Title or official capacity.....

SAVE *time, money, headaches*

by using LATEST 1944 MODEL

FISHER M-SCOPE INSTRUMENTS

The Fisher M-Scope Pipe Finder is successfully solving the varied problems involved in the development, operation and maintenance of buried pipe and cable systems.

M-Scope Pipe Finder

- It locates the exact position of the object
- It traces the exact course of an underground line
- It determines the difference between a buried pipe and a single metal object
- It works positively and instantaneously
- It prevents accidental damage by diggers
- It eliminates exploratory excavations
- It saves time, labor, money

M-Scope Energizer Type Pipe Finder

M-Scope Water Leak Detector

Use the **Fisher M-Scope Water Leak Detector** to determine the exact location of a leak. Its use will enable you to

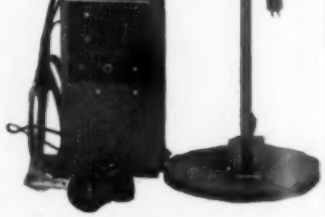
- **Locate exact position of pipe line leak**
- **Determine where to break pavement when leak appears on the surface**
- **Solve the problem of "unaccounted for" water or oil**
- **Reduce operating expenses**
- **Increase net revenue**
- **Every leak is an unmetered user**

THE FISHER M-SCOPE BOX LOCATOR

will locate valves, covered manholes, drip and service boxes, etc., as fast as you can cover the ground at walking speed. Do away with the old and slow dip-needle method. Liberal trade-in allowance on your old dip-needle.

Write to the Fisher Research Laboratory for latest 16-page booklet explaining the above methods. M-Scope Equipment is exclusively manufactured by the Fisher Research Laboratory. Please place your order now for immediate delivery from our Palo Alto, California or Chicago, Illinois warehouses.

Fisher M-Scope Box Locator



FISHER

RESEARCH LABORATORY

1961-63-65 University Ave. Palo Alto, Calif.

Telephone PALO ALTO 24646-7-8-9

Showing the new Syntron self-contained gasoline hammer paving breaker

Gasoline-Powered Paving Breaker

The main advantage of the new gasoline hammer paving breaker announced by The Syntron Co., 430 Lexington, Homer City, Pa., is that it is completely self-contained thus eliminating the need for air compressor, air hose and fittings, ignition battery, ignition coil and heavy cable, or any other source of power or accessory.

This hammer is comparable in power to the larger-sized compressed air paving breakers and is arranged for easy operation by one man.

Weighing 96 pounds, its other features are throttle control of the blow which permits exact placement of the tool; it will drill rock to a depth of 30 inches; it consists of a 2-cycle gasoline engine in an inverted position, with two pistons, one an engine piston and one a hammer piston; it starts by a rope pull; and fuel consumption is relatively low.

The company states that while the bulk of production must go to the armed forces, a few are available on high priority rated orders.

Frank Cunneen Dies; Cochrane Representative

Frank J. Cunneen, the Washington representative of Cochrane Corporation, Philadelphia, Nordberg Mfg. Co., and LeRoi Engine Co. both of Milwaukee, passed on at his home in Washington, D. C., April 7.

Funeral services were held April 10 at the Fort Myer Chapel and burial at the Arlington Cemetery with full military honors.

Mr. Cunneen, a native of Port Jervis, N. Y., was graduated from the Naval Academy in the class of 1914. He was a member of the American Society of Naval Engineers and the Society of Naval Architects and Marine Engineers, as well as a member of the Army-Navy Club and the Army-Navy Country Club, the Propeller Club, and Congressional Country Club.

Aluminum Allotted for Ladders

The Aluminum Ladder Co., Worthington, Pa., announce they have been granted allotments of aluminum by the Government and are now able to manufacture a limited number of fire department ladders.

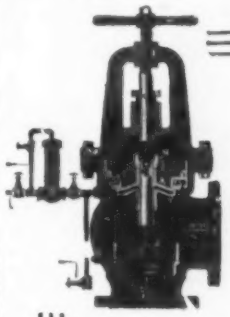
There will be no priorities required to purchase these ladders but firms with priorities will receive first consideration.

Frost New President Michigan Tractor and Machinery

Announcement has been made to the effect that "Jack" Frost is now President of the Michigan Tractor & Machinery Co., Detroit, Mich.

Mr. Frost formerly was Vice-President of the H. O. Penn Machinery Co., 140th St. and East River, New York, N. Y. He had charge of the Mineola, L. I. branch office and service headquarters. More recently during the absence of "Ham" Penn in Washington with the War Production Board, where he was setting up the National inventory of used construction equipment, Mr. Frost was in charge of the company.

The Michigan Tractor & Machinery was founded about a year and a half ago by H. O. Penn. The headquarters of the company are at Detroit and a branch office and service plant at Grand Rapids, Mich. It is the purchase of the proprietory interests from H. O. Penn that takes Mr. Frost to Detroit.



TRIPLE ACTING NON-RETURN VALVE

★

This valve will automatically cut in a boiler whenever its pressure equals line-header pressure; it will isolate a boiler automatically whenever its pressure, from any cause, is lower than line-header pressure; and it will prevent steam flow from the boiler in event of sudden drop of line-header pressure below the boiler pressure, by means of differential shot pilot valve functioning.

★

Furnished in ang'e, globe and elbow patterns, sizes 2½" to 12"; also available in larger sizes, as well as in the Cross pattern.

Write for Specifications

GOLDEN-ANDERSON VALVE SPECIALTY CO.

Fulton Building Pittsburgh, Pa.

WATER MAIN DISINFECTION

Mains
Any Size
Any Place
Any Time

Complete Service furnishing

Chlorinating Equipment
All Chemicals
and
Supervision of
Chlorination

Call or Write for Estimate

LUTHER and WOOD

310 Chandler Bldg., Wash. 5, D.C.
Phone NA. 5934-0906-1561

***Eastern Distributors of* FISHER M-SCOPE *and* LEAK DETECTORS**

Joseph G. Pollard Co., Inc.

141 ASHLAND PLACE BROOKLYN 1, NEW YORK

PIPE LINE EQUIPMENT

CALL BURROUGHS

WHEN YOU NEED "MECHANIZED ACCOUNTING" INFORMATION...

You are welcome to the current information in the mechanized accounting methods library of your local Burroughs office. Or, when new legislation or other developments create new accounting problems for you, ask for special assistance from your Burroughs representative, who can apply his knowledge of machines, applications and procedures to help you meet your changing requirements.

WHEN YOU NEED CARBON PAPER • ROLL PAPER • RIBBONS...

Burroughs is your best source for supplies for all types and makes of business machines. These supplies are manufactured to specifications that Burroughs' years of experience have proved give best results. Burroughs Discount Purchase Plans save you 10% to 40%; permit you to order as little or as much as you need at any one time—thus assuring freshness and eliminating storage problems.

WHEN YOU NEED MECHANICAL SERVICE FOR YOUR BURROUGHS...

Today, when maintenance is especially important, Burroughs is providing efficient service to more customers than ever before. If you have not already done so, protect your Burroughs machines by arranging for periodic inspection, lubrication and adjustment at a moderate annual cost. All service is rendered by factory-trained, factory-controlled service men—is guaranteed by Burroughs.

ARMY E NAVY

"for outstanding production of war materials"

Burroughs is manufacturing and delivering the famous Norden bombsight—one of the most delicate and precise mechanisms ever devised.

New figuring and accounting machines are also being produced by Burroughs for the Army, Navy, U. S. Government and others whose needs are approved by the War Production Board.

Information service . . . supply service . . . mechanical service—in war as in peace, you can depend on Burroughs to provide the best. For prompt, efficient service, call your local Burroughs office, or write Burroughs Adding Machine Company, Detroit, Mich.

Burroughs

ADDING, CALCULATING, ACCOUNTING, BILLING AND STATISTICAL MACHINES
NATIONWIDE MAINTENANCE SERVICE • BUSINESS MACHINE SUPPLIES

Former Mathieson Man Receives Posthumous Award

Lieut. W. W. Highberger, formerly associated with The Mathieson Alkali Works, Inc., 60 East 42nd St., New York 17, has been posthumously awarded the Order of the Purple Heart "for military merit and for wounds received in action." The decoration was presented to the widow of Lt. Highberger. He was reported missing in action in the European area a year ago and is now listed as lost in action.

Lieut. W. W. Highberger

Lt. Highberger received his commission in September 1942 and in view of his many years of experience in the chemical field underwent specialized training in Chemical Warfare at Edgewood Arsenal.

He joined the Mathieson organization in March 1932 as a sales representative and was well known in the New York sales area.

Kwik-Mix Dandie Sales Change

The Kwik-Mix Concrete Mixer Co., Port Washington, Wis., a subsidiary of the Koehring Co., Milwaukee 10, Wis., who has manufactured the Koehring Dandie Mixers for eight years, will now assume the sale, service, engineering, and development of the 7-S, 10-S, and 14-S Dandie Mixers. Kwik-Mix Dandie Mixers, as they will now be known, will continue to incorporate the same important features. Service will be directed from the Kwik-Mix Concrete Mixer Co. Inquiries for information are to be addressed to Kwik-Mix at Port Washington.

The Kwik-Mix Concrete Mixer Co., also manufactures tilting and non-tilting 3½-S mixers, mortar mixers, plaster mixers and bituminous mixers.

The present distributor organization will be considerably increased, A. E. Kelbe, recently appointed sales manager for Kwik-Mix, announced to provide adequate coverage for post-war sales.

Washington Representative for Manufacturers

Luther and Wood, 310 Chandler Bldg., Washington 5, D. C., have recently announced that they represent the following manufacturers:

Cleaver-Brooks Co., Milwaukee, Wis., designers and manufacturers of steam generating equipment and boilers, tank car heaters and boosters, water distillation units, hydraulic power units;

Builders-Providence, Inc., 9 Codding St., Providence, R. I., designers and manufacturers of Venturi meters, rate controllers, accessory instruments and gauges, liquid level indicators, Chronoflo telemeters and orifice plates and flanges for water works, sewerage, and industrial fields;

%Proportioners, Inc.% 99 Codding St., Providence, R. I., designers and manufacturers of mechanical chemical proportioning feeders and controls and meters for water works, sewage plants, and chemical industries;

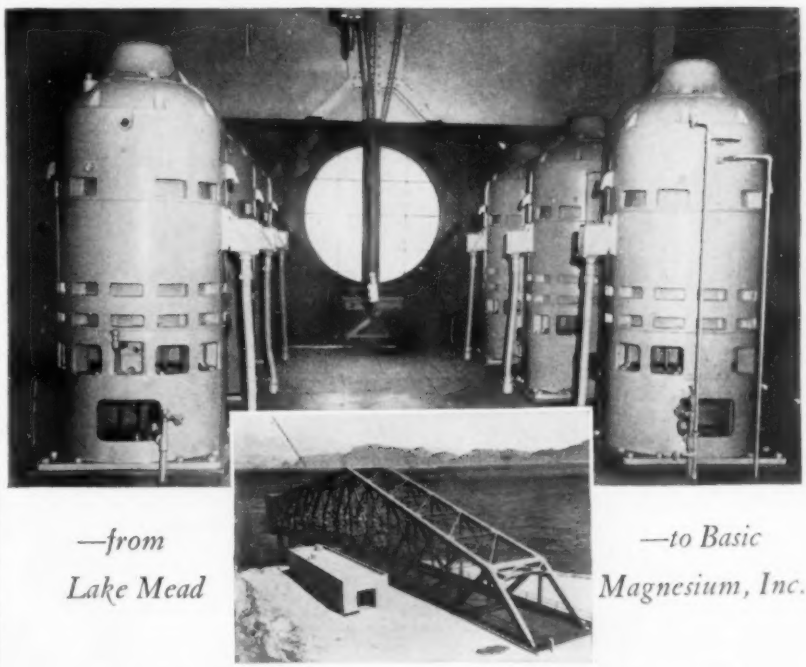
Omega Machine Co., Kansas City, Mo., manufacturers of machines for measuring feeding, and preparing dry and liquid materials for the water, sewerage, and industrial fields.

Alan A. Wood of the firm has been associated with Builders-Providence, Inc. for over thirty years, is widely acquainted in the water and sewage treatment fields, and has worked with most of the consulting engineers in these fields in the Middle Atlantic States.

The other member of the firm, Lloyd S. Luther, represented %Proportioneers, Inc.% and Builders-Providence, Inc., in Washington, D. C.

Aannouncement was recently made that F. E. Spurney has joined the staff. He was associated with Turner Construction Co. of New York for fifteen years, and with the Board of Governors of the Federal Reserve System, Washington, D. C., for five years.

Making **MAGNESIUM** *with* **PEERLESS PUMPED WATER**



—from Lake Mead

—to Basic Magnesium, Inc.

The colossal desert plant of Basic Magnesium near Las Vegas, Nevada, is making thousands of tons of "desert gold" annually for war use. When operating at peak capacity, Basic needs 100,000,000 gallons of water daily. It's Peerless' job to deliver this deluge of water. At Lake Mead, twelve miles away, six huge Peerless Pumps lift the water from the lake and boost it over mountain ridges and through desert stretches to the Basic plant. The direct-connected pumps (Peerless Turbine Type) are mounted on a special Cantilever bridge that reaches out over the lake to deep water. A typical war job that Peerless is proud to be a part of.

PEERLESS PUMPS

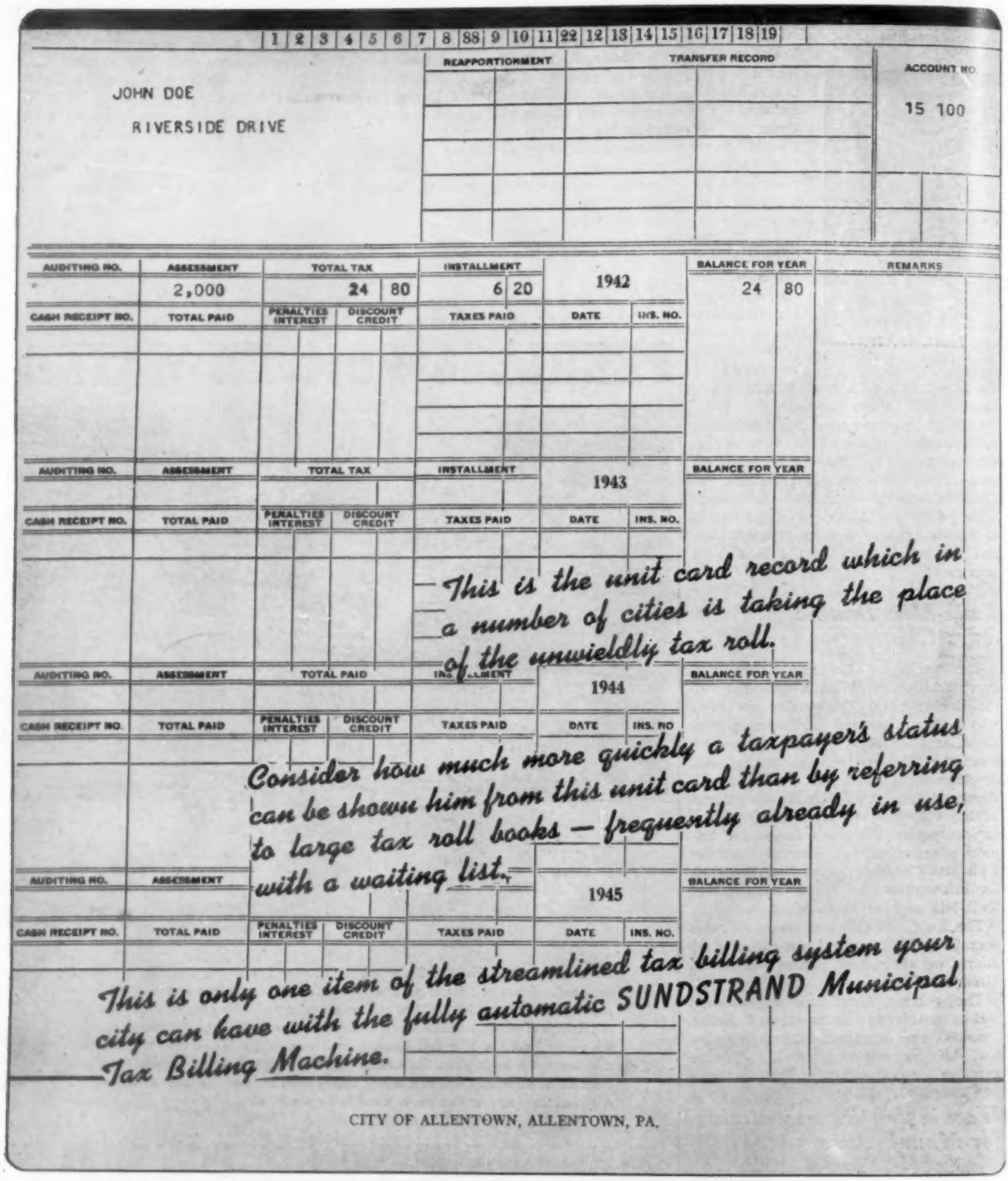
TURBINE, HI-LIFT AND HYDRO-FOIL

PEERLESS PUMP DIVISION *of* ***Food Machinery Corporation***

301 W. Avenue 26, Los Angeles, 31, Calif. ★ 1250 W. Camden Ave., S. W., Canton, 6, Ohio

OTHER FACTORIES: San Jose 5 and Fresno 16, Calif.

TAX WORK SIMPLIFIED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REAPPORTIONMENT
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ACCOUNT NO.
JOHN DOE
RIVERSIDE DRIVE
15 100
AUDITING NO.
ASSESSMENT
TOTAL TAX
INSTALLMENT
1942
BALANCE FOR YEAR
REMARKS
2,000
24 80
6 20
24 80
CASH RECEIPT NO.
TOTAL PAID
PENALTIES INTEREST
DISCOUNT CREDIT
TAXES PAID
DATE
INS. NO.
1943
1944
1945
This is the unit card record which in a number of cities is taking the place of the unwieldly tax roll.
Consider how much more quickly a taxpayer's status can be shown him from this unit card than by referring to large tax roll books — frequently already in use, with a waiting list.
This is only one item of the streamlined tax billing system your city can have with the fully automatic SUNDSTRAND Municipal Tax Billing Machine.
CITY OF ALLENTOWN, ALLENTOWN, PA.

LET US GIVE YOU FULL PARTICULARS

UNDERWOOD ELLIOTT FISHER CO.

Manufacturer of the Famous Sundstrand Municipal Accounting Machine

One Park Avenue — New York 16, N. Y.

General Sales Manager Appointed at Hendy

Wallace Johnson was recently appointed General Sales Manager of the Joshua Hendy Iron Works, at Sunnyvale, Calif., in accordance with an announcement from Charles E. Moore, President of Joshua Hendy.

Mr. Johnson has been associated with the Hendy organization since November, 1942. His work has included several months at the Crocker-Wheeler Division at Ampere, N. J., as assistant to Mr. Moore; several months as an administrative head at Sunnyvale, and from June 1943 until the present time he has been Assistant General Manager of the Pomona Pump Division at Pomona, Calif.

Morris Levit is head of sales for the Joshua Hendy Division, with C. L. Barrett as Sales Manager at the Pomona Division, and L. T. Warner at Crocker-Wheeler Division.

New General Manager for Pacific Union Marbelite

Announcement has been made by The Union Metal Manufacturing Co., Canton 5, Ohio, of the appointment of E. J. Masline, former General Superintendent of the company as General Manager and Director of the Pacific Union Marbelite Co., Los Angeles, Calif. This organization is a subsidiary of The Union Metal Manufacturing Co., functioning as manufacturers and Pacific Coast sales representatives for the parent company. Mr. Masline has been connected with Union Metal since 1911.

E. J. Masline

A. R. Miller, Electrical and Maintenance Engineer, succeeds Mr. Masline as General Superintendent.

Welded Steel Cages for 96-inch Concrete Pipe

In the April issue of THE AMERICAN CITY MAGAZINE there appeared on page 115 an article entitled "Welded Steel Cages for 106-inch Concrete Pipe." The American Pipe and Construction Co., Los Angeles 54, Calif., who furnished the pipe, writes that the article appearing originally in the November, 1943, issue of the "Hobart Arc Welding News" contained a number of errors which the following statements correct:

1. The name of the American Concrete and Steel Pipe Co. was changed in 1942 to American Pipe and Construction Co.
2. Mr. Wm. A. Shelton is not employed by the American Pipe and Construction Co.
3. The pipe is 96-inch reinforced concrete and not 106-inch as stated in the article.
4. The pipe involved in this job is cast vertically in 12-foot lengths.
5. It is reinforced with two concentric cages of reinforcement, spirally wound, and held in place by suitable longitudinal reinforcement welded to the spirals. The reinforcement is $\frac{3}{8}$-inch and $\frac{5}{8}$-inch hot-rolled rods.
6. The pipe is compacted by both internal and external vibrator equipment, and cured by a combination of steam and water curing.
7. The joint is a lead and steel joint with the bell and spigot both made of a welded steel ring which is in turn attached to the longitudinal members of the reinforcement cage by welding.
8. The sealing agent is a fiber-filled lead gasket which is caulked into the joint recess from the inside of the pipe.

The foregoing is a correction of the article "Welded Steel Cages for 106-Inch Concrete Pipe" appearing on page 115 of the April issue of THE AMERICAN CITY MAGAZINE.

The 96-inch line constitutes the water tunnels of the Harbon Steam Plant for the Department of Water and Power, Los Angeles. A major element of the pipe construction was the spirally wound and welded cage reinforcement.

Rx for POST-WAR PLANNING

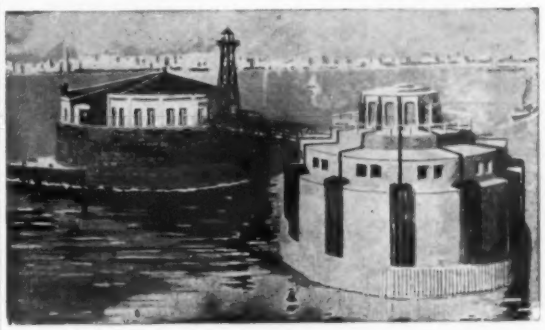
PITTSBURGH · DES MOINES

INCINERATION PLANTS

Smooth the path to community post-war employment and improvements, by blueprinting your refuse disposal requirements *now*—with the able technical assistance of Pittsburgh-Des Moines engineers. Meantime, write for bulletin No. 601.

PITTSBURGH · DES MOINES STEEL COMPANY

Pittsburgh, Pa. . . . 3412 Neville Island
Des Moines, Ia. . . . . 913 Tuttle Street



For..... Big Jobs in..... CHICAGO they.... use.....

SPARLING MAIN-LINE METERS

TO supply 1⅓ billion gallons a day Chicago draws water through cribs like these in Lake Michigan. Measurement and chlorination is controlled by open-flow Sparling Meters. We are now supplying three more big ones for the new South Filtration Plant. Each meter works on the same principle — for 2-inch flow or a 16-footer. Consult our Bulletin 308.

R. W. SPARLING *Manufacturer of Water Measuring Equipment*

LOS ANGELES 54....Box 3277 Terminal Annex
CHICAGO 16.....3104 South Michigan Ave.
BOSTON 8.....6 Beacon Street
622 Broadway.....CINCINNATI 2
101 Park Avenue.....NEW YORK 17

TRAPPED!

TIME was when police effort to round up criminals was often a case of too little and too late.

Today it is vastly different.

In hundreds of communities, RCA Police Radio Systems bring the whole police department into united, coordinated action almost instantly.

In emergency, men and machines swiftly converge on the scene. Trap criminals. Disperse trouble-makers. Restore order. Save life.

RCA Emergency Radio installations, efficient and dependable, help municipal, highway, county and state police function better, faster, with less strain. Ease the burden on overworked police executives. Protect the public. Keep taxpayers more contented.

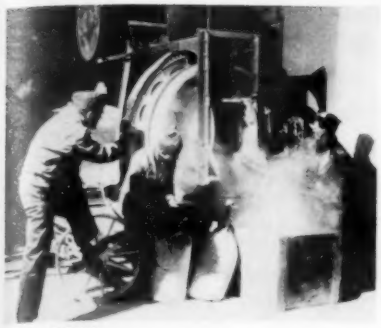
RCA production facilities are at present devoted to war work. But our engineers will gladly help you now to plan a modern police radio system for installation later—when war permits. Please address inquiries to Police Radio Section, RADIO CORPORATION OF AMERICA, Camden, New Jersey.

RCA

BUY MORE WAR BONDS

RCA Emergency Communications Equipment

RADIO CORPORATION OF AMERICA



ACME PHOTO

The Ransome Mixer that is helping the Army to overcome one of its "enemies."

Dramatic Role for Ransome Mixer

A concrete mixer manufactured by the Ransome Machinery Co., Dunellen, N. J., a subsidiary of Worthington Pump and Machinery Corp., Harrison, N. J., is playing a vital part these days in the program instituted by the U. S. Army in Naples.

The half-ton capacity Ransome 14S Concrete Mixer was put into use to help blend DDT delousing powder with talc to prevent skin irritation as part of the fight with spray gun and vaccination needle.

Military Police Guidon for Autocar

Formal presentation of the Military Police Guidon to the Auxiliary Military Police force of the Autocar Company, Ardmore, Penna., was made recently by Col. Thomas H. Stilwell, commanding officer, District No. 5, 3rd Service Command, U. S. Army, accompanied by Lt. Col. C. C. Madiera and his staff of four officers and three sergeants. The Autocar force numbers 70 men under the command of Capt. Carl Svenson. Organized more than a year before Pearl Harbor it has steadily increased as the Autocar factory operations have expanded during the war.

Robert P. Page, Jr., President of the company, opened the ceremonies. In presenting the Guidon, Col. Stilwell pointed out that it was only the 39th award of its kind that had been made out of a possible total of 750 squads in the area under his command. The award was accepted by D. T. Dunning, Autocar plant engineer, for the company.

Fairbanks, Morse Opens Tulsa Office

Fairbanks, Morse & Co., Fairbanks-Morse Bldg., Chicago 5, Ill., announced recently the opening of a new office at 1335 Hunt Bldg., in Tulsa, Okla.

This new district office is under the management of Frank D. Ratcliffe, who is District Manager of Oil Industry Sales.

★★★

"Bob White"

BOX LOCATORS

Will locate your boxes as fast as you can walk.

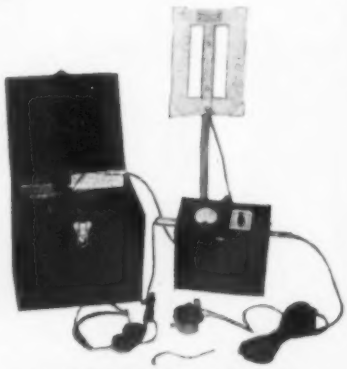
Write for details

"Universal"

LEAK DETECTORS

All kinds of "Universal" pipe locators and leak detectors.

Ask for bulletins



S. F. FERGUSON

11 Hill Street Newark 2, N. J.

MURDOCK SINCE 1853

SELF-CLOSING ANTI-FREEZING HYDRANT

...the Most Reliable Name on OUTDOOR Water Service Devices

...identifying the most dependable Outdoor Water Service Fixtures.

...they give less trouble.

...they have an unmatched record, in every city, over the years, of low maintenance costs.

...it pays to buy

MURDOCK

The Murdock Mfg. & Sup. Co.
426 Plum St., Cincinnati 2, O.

ANTI-FREEZING COMPRESSION HYDRANT

LARGE ANTI-FREEZING HYDRANTS 1½" TO 2" INCLUSIVE

"LOCK-LID" STREET WASHERS 3/4" and 1" SIZES

"Air-Lock" ANTI-FREEZING OUTDOOR DRINKING FOUNTAIN

WARTIME TRAVELERS RELAX at Statler Hotels

IF it's *necessary* for you to travel, and if your trips take you to Statler cities, assure yourself of *comfort* and *relaxation* by staying at Statler Hotels.

At Statler Hotels, you get the three wartime necessities for travelers today: Comfortable rooms, delicious food, and restful relaxation.

There are Statlers in:

BOSTON • BUFFALO • CLEVELAND
DETROIT • ST. LOUIS

★

NEW YORK Hotel Pennsylvania
PITTSBURGH Hotel William Penn
WASHINGTON, D. C.

Etnyre presents this book to assist officials in organizing their post-war plans.

Etnyre Issues Booklet on Post-War Planning

E. D. Etnyre & Co., Oregon, Ill., manufacturers of Black-Topper bituminous-materials distributors and sanitary street flushers, recently issued a new post-war planning booklet entitled "Road Building in U. S. A."

The booklet presents statistical data showing road construction during the last ten years, the average cost of construction per mile and the average maintenance costs. It also charts the total road mileage of the U. S. A., giving unimproved, improved and surfaced mileage. It also presents a chart showing how a modern highway can be made to pay for itself in license fees and gas taxes.

In commenting on the booklet, George M. Etnyre, Secretary and General Manager said, "We believe it the responsibility and duty of everyoen in any way engaged in the road, street and airport business, to do all within his power to cooperate with the federal, state, county and municipal officials in the sound planning and blueprinting now of the construction, rebuilding and maintenance programs for post-war era. We offer the booklet free and invite inquiries. Thus as just one company we try to do our bit in post-war planning."

New Engineering Partnership

Harvey P. Jones, consulting engineer, Toledo Trust Bldg., Toledo, Ohio, announced recently the formation of the new firm of Jones and Henry at the same address. The new member of the partnership is Thomas B. Henry, hydraulic and sanitary engineer.

Mr. Henry has been associated with the former H. P. Jones & Co. in responsible charge of investigations, reports, design and supervision of construction of municipal and industrial engineering work since 1927.

He is a member of the American **Water Works Association.**

A SMALL SPACE . .

for the big story of construction jobs at home and abroad that are using Servicised Products.

Para-Plastic—for the top seal of Expansion and Dummy Joints. The hot-poured, rubber-like, waterproof seal that conforms to Federal Spec. SS-F-336, C.A.A. Spec. P-605 and the Specifications of State Highway Departments.

Expansion Joints for any purpose—Asphalt, Fiber, Cork and Self-Expanding Cork.

Sewer Pipe Joint Materials—Hot-poured "Vitriflex", ready mixed cold troweled "Tufflex", or Pre-Moulded Belts.

Asphalt Plank—Mineral surfaced, Standard or Industrial.

Literature on request.

SERVICISED PRODUCTS CORP.

6051 W. 65th St., Chicago 38, Ill.

"The Engineer you wrote for is here, Sir . . ."

• • • —— Welcome words, our friends in the Sewage and Water Works plants tell us.

★ ★ ★ ★

• • • —— Because Tennessee Corporation's Consultant Staff, Engineers of long and practical experience, have solved many water and sewage coagulation difficulties.

★ ★ ★ ★

• • • —— It is a free service, this consultant service. An investment which the Tennessee Corporation has made in the interests of a healthier America.

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• • • —— Take advantage of this service now! Write us your coagulation problems. It will be a pleasure to help you in the solving of them.

The Mark of Quality

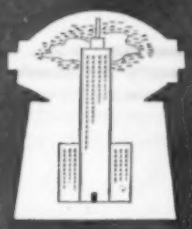
TC TENNESSEE CORPORATION

Tennessee Corporation

Atlanta, Georgia **Lockland, Ohio**

Manufacturers of

Ferri-Floc *Copper Sulphate*



MIMEOGRAPH SERVICE IDEAS

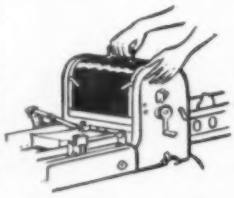
"Off Duty" Care of the Mimeograph duplicator

Here's a page for public administrators to put in the hands of their Mimeograph operators, especially if those operators are seeing their first duty with this office machine. If your old help have gone off to war they may not have had time to instruct your new recruits fully in its care and operation. We offer these suggestions in the interests of the clean, crisp, sharply legible work your Mimeograph duplicator was built to give you, and in a spirit of helpfulness to your new Mimeograph operator.

A Number One rule! Be careful to keep your Mimeograph duplicator properly oiled. Follow directions in the Instruction Book . . . using a MEDIUM OIL similar in consistency to that used in automobile cylinders. Such oils are usually available in small bottles at hardware stores.

When not in use, be sure to keep the cylinder in the "Stop Here" position, which is the level point. Also see that the machine itself is on an even keel. If the machine is tilted to one side, the ink will flow to that side and seep from the cylinder. Copies when produced tend to be light on the side which is higher.

Don't forget the "protective cover" when you put the Mimeograph to bed. And here's how you put it on . . . Attach it as you would a stencil, leaving the stencil end clamps slightly open. Run a few sheets of paper through to seal the cover to the pad and then lock the end clamps and leave the cylinder in the "Stop Here" position. If the cover is not used or sealed properly, the ink is likely to seep out.



The ink pad should be changed from time to time, usually every thirty days or oftener. As the ink pad is a secondary reservoir for the ink, copies will be spotty if the pad becomes matted or clogged.

The book with all the answers

All the whys, whens, and wherefores of caring for and operating the Mimeograph duplicator are set down in the book of Operating Instructions. Keep it handy and refer to it when there is any question in your mind about how to proceed. If the copy that came with your machine has been misplaced, write us. We'll be glad to send you another. Or if you need additional assistance, don't hesitate to let us know. Our address: — A. B. DICK COMPANY, 720 W. Jackson Blvd., Chicago 6.

Lint from paper gathers on the machine and slows up its efficiency. Get after it with a long-handled, stiff-bristled brush every month or oftener. Clean retainer and feed pads regularly with clear water. (Don't use soap. It makes rubber pads slick, preventing them from gripping the paper properly.)

Mimeograph duplicator

MIMEOGRAPH is the trade-mark of A. B. Dick Company, Chicago, registered in the U. S. Patent Office.

Allis-Chalmers Announces New Vice-Presidents

Walter Geist, President of Allis-Chalmers Manufacturing Co., Milwaukee, Wis., announced recently that the Board of Directors had elected three new vice-presidents for the company.

Wm. C. Johnson

Wm. C. Johnson joined the organization in 1924 as a field engineer in the mining and cement making machinery divisions. After serving in the Atlanta and Knoxville district offices he was placed in charge of sales for the Crushing and Cement and Mining Machinery Department and in 1942 was appointed General Sales Manager of the General Machinery Division. As Vice-President he will be in charge of all product sales except those of the Tractor Division.

J. M. White

James M. White, until his election as Vice-President, was General Works Manager in charge of manufacturing. He joined the company's manufacturing department in 1920 and served successively as Acting Works Manager at the LaPorte Plant. As Vice-President he will direct the company's manufacturing activities of all plants.

W. A. Roberts

W. A. Roberts has been actively connected with the company for twenty years. From 1931 to 1941 he was General Sales Manager of the Tractor Division. Following that he succeeded the late Harry C. Merritt as Manager of the Tractor Division, which title he retains with his promotion to Vice-President.

Concrete Curing Mfg. Association

In an endeavor to bring about the unification and betterment of the concrete curing industry, manufacturers of membranous compounds for curing concrete have organized the Concrete Curing Manufacturing Association. The primary purpose of the organization is clarification of testing methods, adoption of standard specifications, and the establishment of uniform application methods.

A temporary organization was formed at a meeting held in Chicago recently. Gloster P. Hevenor, The Johnson-March Corp., New York, was named Chairman; Clark Moots, Battenfield Grease & Oil Corp., Kansas City, Mo., is Secretary. The Executive Committee consists of Mr. Hevenor; George W. Whitesides, Solvents and Plastics Company of Louisville; R. W. Madison, Truscon Laboratories of Detroit; and A. F. Penny of G. F. Sterne & Sons, Ltd., Brantford, Ont.

The member companies produce over 90 percent of all the membranous curing used in the United States and Canada.

One of the first steps of the association was the presentation of a communication to Committee 617 of the American Concrete Institute, suggesting the inclusion of membranous curing as an alternate method in the specification now under consideration, and recommended that the standard test for evaluating membranous cures be ASTM standard C-156-40T, with certain minor modifications, and that the specification be standardized with that recommended by The Highway Research Board.

R.D. COLE QUALITY

TANKS
TOWERS
& STANDPIPES
STACKS
KIERS
KETTLES
VATS
AIR RECEIVERS
WELDED STEEL PIPE
DIGESTERS
BOILERS
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MARITIME "M" MERIT AWARD

Tank Builders for over 80 Years

R. D. COLE MFG. CO.
Established 1854
NEWNAN, GEORGIA

Locate Underground Leaks
Without Digging With A
GLOBE GEOPHONE!

(Registered U. S. Patent Office)

Simple to operate. Anyone can use it successfully. Does not require engineering skill or any technical knowledge. A mechanical type instrument. No fragile parts to be serviced and replaced.

The GEOPHONE works on the principle of the seismograph. Placed in contact with the earth, it accurately detects, by sound, the position of leaks in underground water or steam pipes. Leaks are too costly to be ignored—a pinpoint size leak wastes 65,000 gals. of water annually! A GEOPHONE saves the cost of locating leaks—saves the cost of surveys, excavating, replacing. A big-paying investment for water, sewerage and Public Works Departments—for any plant with underground water or steam pipes.

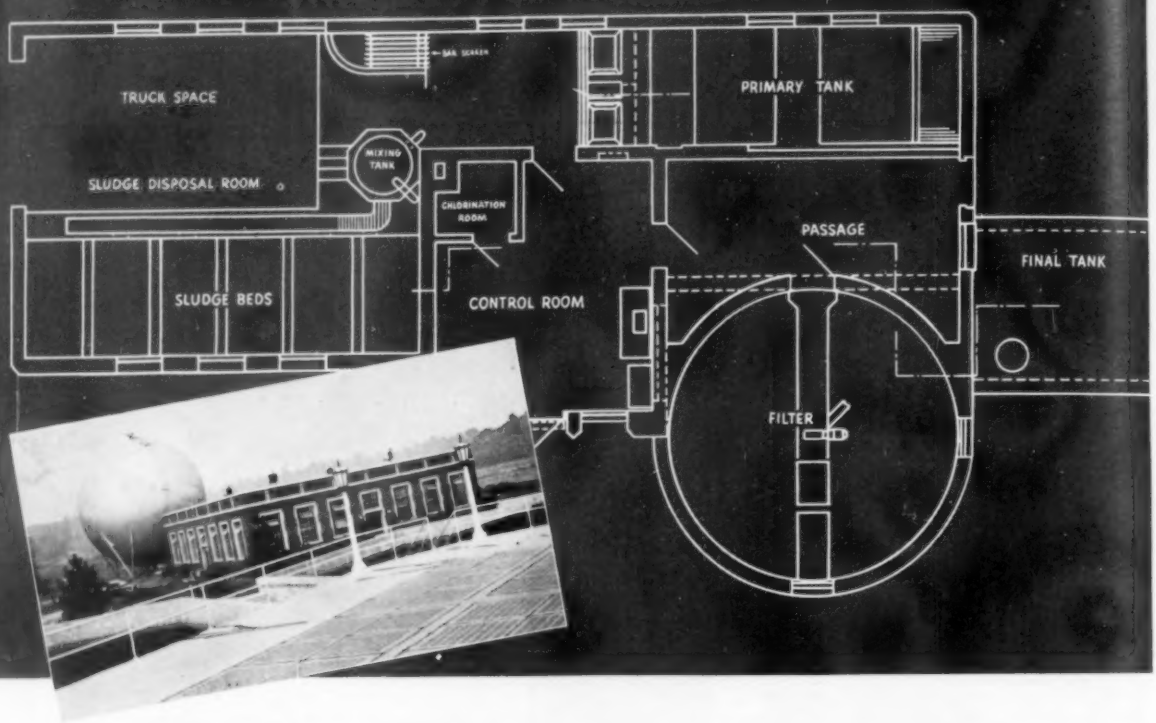
Outfit complete with two GEOPHONES, connecting tubes, earphones, in heavy leather carrying case with shoulder straps ---------- **$75**

Write at once to

Globe Phone Mfg. Corp. Dept. H Reading, Mass.

Before you put that plant on paper

weigh the advantages of aluminum



Architecturally, the fine appearance of aluminum construction gives a community added reason for being proud of its sewage treatment plant. Makes them want it kept up well. There's less kick on plant maintenance costs.

From an operating standpoint, this construction is easier to maintain. Aluminum is naturally resistant to corrosion; needs little attention to keep it good as new. And, where conditions are unusually severe, it can be given protective coatings.

Wartime performance records show that aluminum is coming through this period of curtailed maintenance with flying colors.

Where can you use Alcoa Aluminum in your postwar plants? From skylights to sills, for decorative and utility purposes, architects have employed aluminum to advantage. From coarse screens on through all the plant processes, engineers have found it equally valuable. Alcoa engineers will gladly help you determine where you can use it. ALUMINUM COMPANY OF AMERICA, 2172 Gulf Building, Pittsburgh, Pennsylvania.

ALCOA ALCOA ALUMINUM **ALUMINUM**

REG. U.S. PAT. OFF.

Eastern representatives of Pittsburgh Equitable Meter Company meet at the home office. FRONT ROW: *Maynard, Siedentopf, Obrock, Jerge, O'Grady, Atwell, Gottwald, Gavin, Ricketts, Abbott.* SECOND ROW: *Hamilton, Lufkin, Kenny, W. W. Dixon, Cloran, Jerman, Col. Rockwell, L. A. Dixon, Foster, Arens.* THIRD ROW: *Mowrey, Harper, Gordon, Eyler, Taylor, Moore, Stroyd, Thomas, Andrews, Smith, Rand, Marsh.* BACK ROW: *McAuley, Brown, Keller, Noyes, Carlon, Oaks, Bixby, Geuss, Finley, Burnette, Fallows, Gleeson, Trimble.*

Eastern Representatives Meet at Pittsburgh Equitable Factory

Colonel W. F. Rockwell, President of Pittsburgh Equitable Meter Company, Pittsburgh 8, Pa., recently called the annual meeting of the eastern representatives of the organization.

All district managers and service engineers from Atlanta, Columbia, Brooklyn, Buffalo, New York, Pittsburgh and Boston offices met at the general offices with company executives for a discussion of problems relating to field operations. The engineering staff reviewed the company's products and post-war plans and markets were also discussed.

Third Army-Navy "E" for Barber-Greene

For high achievement in the production of war material the employees and management of The Barber-Greene Co., Aurora, Ill., were recently awarded for the third time the Army-Navy Production Award.

Barber-Greene manufactures asphalt equipment, ditchers and other material handling machines used in every theatre of operation.

Sullivan Machinery Elects Vice-Presidents

The Sullivan Machinery Company, Michigan City, Ind., announces the election of two new Vice-Presidents. Mr. J. A. Drain, Jr., is Vice-President in charge of Product Engineering, Research and Development. Formerly Assistant to the President, Mr. Drain was President of the Stefco Steel Co. before coming with Sullivan Machinery Company.

The new Vice-President in charge of sales in the United States and Mexico is Mr. O. J. Neslage, former General Sales Manager. Mr. Neslage has served as branch office manager in various district offices in the mining, oil, construction, and industrial territories of the United States and Mexico.

O K CHAMPION
SEWER CLEANERS

PROMPT DELIVERY — While the manufacture of material for the Armed Forces has slowed deliveries of our Power Model Sewer Cleaners, we build two sizes of hand-operated OK Champions that are ready for immediate shipment.

LOW COST—The OK Champion Junior and Standard Sewer Cleaners are nominally priced. The smallest towns and villages are now keeping their sewerage systems in 100% operating capacity with OK Champions.

Ask for Literature

Champion Corporation
4716 Sheffield Ave. Hammond, Ind.

SAFETY on the Home Front

M-B Motorless Marker striping factory aisle.

Reduce accidents to a minimum, both indoors and outdoors, by systematically striping designated traffic lanes. M-B MARKERS simplify the job. They handle ANY type of striping job — factory aisles, street centerlines, crosswalks, etc. Also handy for marking airports, athletic fields, tennis courts, playgrounds, etc. Quickly convertible to all-purpose paint sprayer for painting park benches, guard rails, traffic signs and other municipal equipment. Two types — motor-driven for all-purpose painting and motorless for striping only. Write for literature.

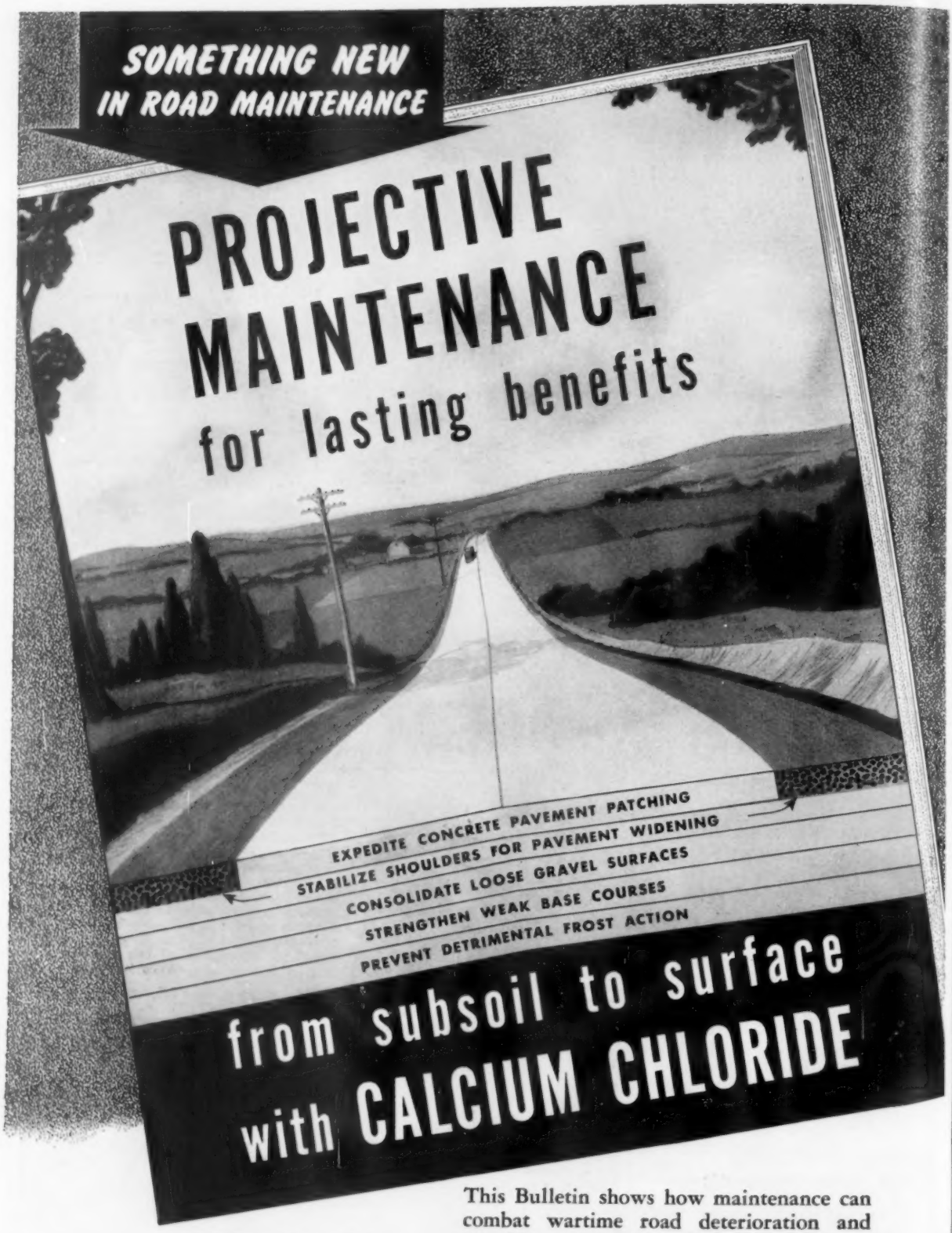
Meili-Blumberg Corp., Dept. A-5, New Holstein, Wis.

M-B Motor-driven Marker putting down double line at street intersection.

M-B Motor-driven unit marking single line on airport runway.

MB MARKERS

A 4365-½

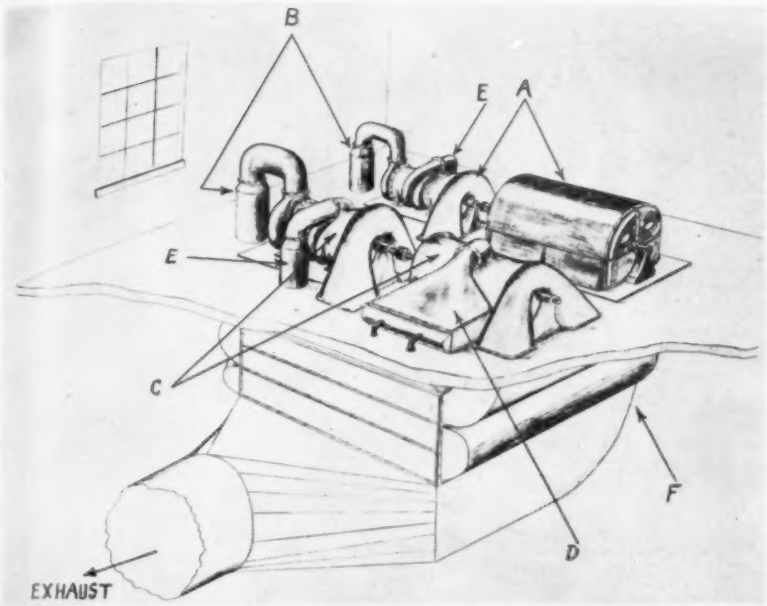


Write for this New Bulletin

This Bulletin shows how maintenance can combat wartime road deterioration and provide a better foundation for postwar highways. It is full of helpful suggestions on materials and methods and is mailed on request.

CALCIUM CHLORIDE ASSOCIATION • 4145 Penobscot Building, • Detroit 26, Mich.

Post-War Power Plant



Above is a drawing by an artist at the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., showing his conception of a 5,000 kw open cycle gas-turbine plant, using reheat, intercool and regeneration. Two gas turbines are used: one a constant speed generator drive, the second a variable speed compressor drive.

(a)—Constant speed gas turbines and generator; (b)—Combustors; (c)—Variable speed gas turbine and compressor; (d)—Intercooler; (e)—Reheater, combustor; (f)—Regenerator.

LaPlant-Choate Awarded Third "E"

Management and employees of the LaPlant-Choate Mfg. Co., Cedar Rapids, Iowa, makers of construction equipment, have been awarded for the third time the Army-Navy Production Award which adds the second white star to their "E" flag.

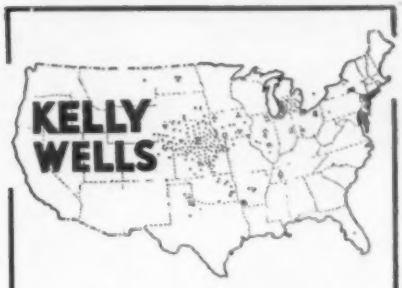
The award was granted for the company's pioneering, in cooperation with U. S. Army Engineers, in developing specialized construction equipment units in the earth-moving field and hydraulic mechanism for bombers.

Factory Manager Named for Anchor Fence

Wm. F. Brannan, President of the Anchor Post Fence Co., Baltimore 24, Md., announced recently the appointment of John S. Case as Factory Manager of the Baltimore plant. Mr. Case succeeds V. W. Heggie who resigned last year to enter the Navy as Lieutenant Commander.

Mr. Case has been associated with the organization since 1936 when he was Assistant Engineer in the Heating Division. Prior to coming with Anchor he was with Robbins and Myers, Inc., Springfield, Ohio.

Announcement is also made that K. P. Brace has joined the staff of the company as Assistant Manager, Air Craft Equipment Division. He was formerly with Bendix Products Division, Bendix Aviation Corp. and more recently with the Bureau of Aeronautics, U. S. Navy.



ALL OVER THE MAP!

For 25 years Kelly concrete cased wells have stood the test of time. We have several thousand now in service, covering a territory of 33 states and parts of Canada.

Kelly concrete cased wells are especially adapted for developing large water supplies from sand and gravel formations.

We Guarantee our wells to develop all available water, sand free, to their full capacity.

KELLY WELL CO., INC.
Grand Island, Neb.

NON-CLOGGING FOR SEWAGE SERVICE

The impellers of these Morris non-clogging Sewage Pumps have such "thoroughfare" passageways that, for example, an 8-inch wooden ball will pass completely through a 10-inch pump of this type. These pumps are built both horizontal and vertical, and for operation by standard-speed motors.

Bulletin on request

Morris Machine Works
Baldwinsville New York

MORRIS
CENTRIFUGAL PUMPS
for municipal services

INSTALLATIONS WORLD WIDE
LARGEST CITY TO SMALLEST VILLAGE

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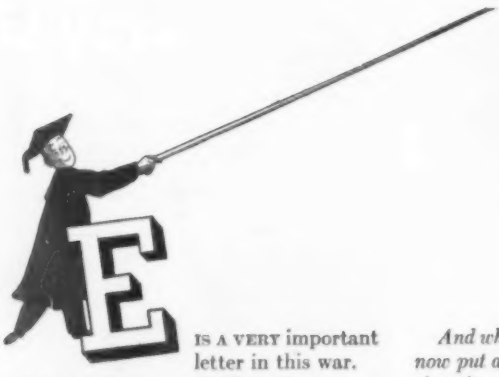
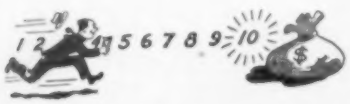
Some ABC stuff about E



IS A VERY important letter in this war.

It's the name of the War Bonds you buy—"War Savings Bond Series E."

As you know, a Series E Bond will work for you for ten full years, piling up interest all that time, till finally you'll get four dollars back for every three you put up. Pretty nice.



The first job of the money you put into "E" is, of course, to help finance the war. But it also gives you a wonderful way to save money.

And when the war is over, that money you now put away can do another job, can help America swing over from war to peace.

There'll come a day when you'll bless these Bonds—when they may help you over a tough spot.

That's why you should make up your mind to hang on to every Bond you buy. You can, of course, cash in your Bonds any time after you've held them for 60 days. You get all your money back, and, after one year, all your money plus interest.

But when you cash in a Bond, you end its life before its full job is done. You don't give it its chance to help you and

the country in the years that lie ahead. You kill off its $4-for-every-$3 earning power.

All of which it's good to remember when you might be tempted to cash in some of your War Bonds. They are yours, to do what you want with.

But . . . it's ABC sense that . . .

They'll do the best job for you and for America if you let them reach the full flower of maturity!

WAR BONDS to Have and to Hold

The Treasury Department acknowledges with appreciation the publication of this message by

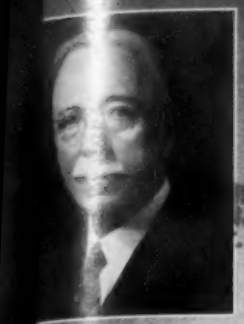
THE AMERICAN CITY

JUN 15 1944

The American City

JUNE, 1944

As operating heads of the water departments of the fourteen largest cities in the United States, these men have the major responsibility for assuring to their more than 22,000,000 local fellow citizens an adequate, safe, and satisfactory water supply. They are all looking forward, no doubt, to even higher standards in equipment and maintenance as more materials, machinery, and manpower become available.



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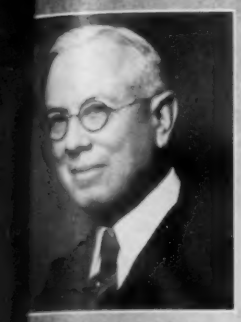

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